



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

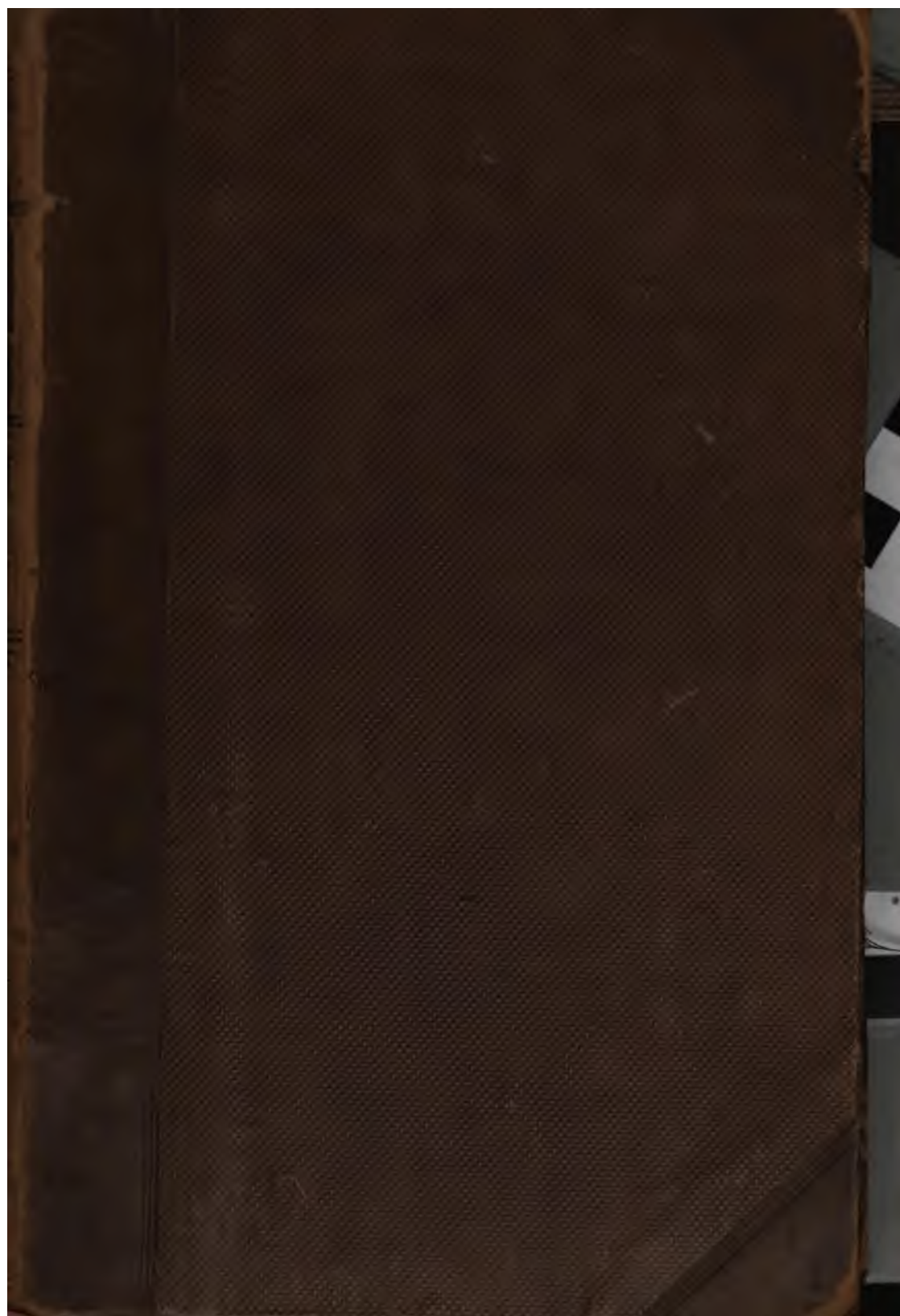
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>





£20

96



A
HISTORY
OF
INVENTIONS AND DISCOVERIES:

ALPHABETICALLY ARRANGED.

BY
FRANCIS SELLON WHITE, Esq. F.A.S.

MANY YEARS ON THE MILITARY STAFF IN INDIA.

PRINTED FOR C. AND J. RIVINGTON, LONDON,
BY CREASY AND BAKER, NORTH STREET, BRIGHTON.

1827.

PREFACE.

AN attempt is made in this publication to trace, in a plain and concise manner, the Origin and Progress of the various Arts and Sciences, and of those Discoveries and Institutions which have contributed to the improvement or civilization of mankind, or are intimately connected with the history of this country: by which the acquirements of the Ancients are brought into competition with those of the Moderns, and the introduction and cultivation of the liberal and mechanical arts in England, compared with the advancement of them in other countries.

It may, however, be necessary to premise, that most of the arts requisite to the subsistence, or conducive to the immediate comfort of mankind, are nearly co-eval with the human race, or have sprung up at different periods, and in various countries, so remote, as to preclude any satisfactory information with respect to their origin; and the history of many others which tend to the embellishments and luxuries of life, has been transmitted to us either by written documents, which, during the lapse of ages, must have been greatly mutilated and corrupted, or, by the still less satisfactory channel of tradition, intermixed with fabulous and romantic conceits.

In an Archæological work of this description, it was difficult to fix upon any general term, by which the nature of it would be readily understood ; and hence it will be found to comprehend many subjects, which might otherwise appear foreign to the title.

Each article has been compiled from the writings of different authors of established reputation : and every attention has been paid to settle the chronology according to the most approved authorities.

Without any design of soliciting unmerited indulgence, it is but just to observe that the present work was not commenced upon with any view to publication, but solely for the purpose of amusement, and of employing some portion of that time, which the cessation of active professional services had rendered peculiarly irksome ; but having in its progress assumed a magnitude beyond the expectations of the Author, he has been induced to submit it to the public, under the hope that its utility may be admitted as an apology for any defect in its composition.

In order to prevent the constant repetition of dates, it has been thought convenient to add a list of the most celebrated authors quoted or referred to in the work, with the period in which they flourished.

HISTORY

OF

INVENTIONS & DISCOVERIES.

ABACUS. The necessity of some method for facilitating mercantile computations must have been experienced in a very early period, and accordingly we find that long before either numeral letters or figures were known, a plain board or table divided into squares, each of which was of a different numerical value, was resorted to for this purpose: and received the name of Abacus from Pythagoras, the supposed inventor of it, about 550 B. C. A similar practice was adopted by the Chinese and Indians; and also by the Romans till the dissolution of their empire, from which period this mode of calculation was lost in Italy till the tenth century; when Malmsbury states it was revived by Pope John XV., who had made himself acquainted with the use of the Abacus, from the Saracens in Spain.

That the English were early acquainted with a knowledge of arithmetic, is proved from a treatise having been written upon that science by Aldhelm, bishop of Sherborne, who lived in the seventh century, and it is not improbable that the method of computation by the Abacus was introduced into this country by the Romans. So late as towards the close of

the sixteenth century, the use of the Abacus was the first arithmetic taught to children of whatever rank, and the only method practised by the common people. The English Abacus was a table having six parallel lines drawn across it ; the first of which was for units, the second for tens, the third for hundreds, the fourth for thousands, the fifth for tens of thousands, and the sixth for hundreds of thousands. In merchants' houses the lowest line served for pence, the next for shillings, the third for pounds, and the fourth for scores of pounds ; upon these lines counters were placed, and as the intervals between them would admit of but one counter, it was considered of half the value only of the line above it : thus, the interval between the pence and shillings was sixpence, between the shillings and pounds ten shillings. Most of the counters employed for this purpose were, till the reign of Henry VIII., manufactured in France, and had some appropriate inscription, as, *Gardez vous de mis comp-ter, &c.*, which counters being frequently found among the ruins of Abbies, are now generally known as Abbey-pieces.

ABBEY. About the commencement of the second century, many of the most pious among the Christians began to form themselves into distinct societies, and to reside together in a kind of brotherhood, in places where they might perform their religious duties without molestation. In the course of time the place of their residence acquired its name from the particular order by which it was inhabited, thus the abbies and priories were so called, from their being governed by an abbot or prior.

According to Speed, the first abbey in the world was founded at Bangor, in Flintshire, about the end of the second century, when Lucius, king of Britain, sent Fagamus and Damainus to instruct the Welch in the Christian faith. Bede describes it as being in a very flourishing state at the time of Saint Augustin's arrival in England ; and Vaughan says, it

had then an establishment of two thousand four hundred monks, who in turns, one hundred every hour, read prayers and sung psalms without intermission. This celebrated monastery was destroyed in the year 605, and twelve hundred of its monks massacred by Ethelfrith, King of Northumberland, in consequence, as Dugdale relates, of their praying for the success of their countrymen and fellow-christians against the Saxon infidels; on the other hand, Godwin and others assert it to have been at the instigation of Saint Augustin, from their obstinacy in refusing to acknowledge the jurisdiction and supremacy of the Roman Pontiff.

The greatest and richest monasteries and abbies were founded in England prior to the Norman conquest, at which period there were about one hundred, but towards the close of John's reign the number had increased to four hundred and seventy-six abbies and priories, and eighty-one alien priories, and afterwards many chantries, houses of friars, hospitals and colleges were erected. Cambden states the number of monasteries suppressed in England and Wales during the reign of Henry VIII., at six hundred and forty-three, besides ninety colleges, two thousand three hundred and seventy chantries and free chapels, and one hundred and ten hospitals. Sir Edward Coke mentions the following twenty-six abbies and two priories, as having the privilege of a seat in the great Council of the State.

1. *Glastonbury*. This monastery was founded by St. Patrick in 425, on the site of an ancient church supposed to have been built by Joseph of Arimathea, who had been sent by Philip the Apostle of Gaul, about the year 64, to preach the gospel in Britain. St. Patrick, who was the first Abbot, is said to have previously resided there thirty-two years as a hermit. Richard Whyting was the fifty-ninth and last Abbot; and for opposing the Reformation and refusing to surrender his Abbey, was, in the year 1540, hanged, drawn and quartered at Glastonbury; being drawn thither on a hurdle from

Wells, where he had been condemned at the Assizes, and then hanged upon the hill where St. Michael's church, now called the Torr, stands, after which his head was set upon the Abbey gate, and the Abbey itself demolished.

The Abbot of Glastonbury took precedence of all the other mitred Abbots till the year 1154, when this honour was conferred upon that of St. Albans, it being the native place of Pope Adrian IV.

2. *Canterbury*. Ethelbert, King of Kent, at the solicitation of St. Augustin, founded a monastery at this place, in the year 605, which he dedicated to St. Peter, though it was afterwards more generally known as St. Augustin's Abbey. About the year 683, Pope Leo II. honoured the Abbot with a place in the general Council of Rome, which induced him to claim an exemption from episcopal jurisdiction, being under the immediate protection of the Pope. The privilege of a mint was also conferred upon the Abbey in the reign of Ethelstan. Peter, the first Abbot was nominated by St. Augustin. John Sturvey, alias Essex, was on the dissolution of monasteries the seventy-second Abbot.

3. *Westminster*, so named from its being West of St. Paul's, according to Dugdale, had a church at a very early period, which was the burial-place of Kings, from the time of Lucius, A D. 180, till the persecutions under Dioclesian, when it was converted into an idolatrous temple of Apollo. This edifice was situated in an island called Thorney, and was destroyed by an earthquake in the time of Antoninus Pius. Upon its ruins Sebert, King of the East Angles, about the year 610, founded an Abbey, and dedicated it to St. Peter, which being afterwards damaged by the Danes, was repaired by St. Dunstan, and considerably enlarged and beautified by Edward the Confessor, who established in it a society of Benedictines, and was there buried. This monastery was pulled down by Henry III., who erected the present building, to which Henry VII. added his chapel, called by Leland

the wonder of the world. Silwardus was the first Abbot: Herebertus, the fifteenth Abbot, founded in 1121 Kilburn Abbey, in the County of Middlesex, making it a cell to Westminster. William Benson was the forty-second and last Abbot, and on the dissolution of monasteries was made by Henry VIII., in 1539, the first Dean of Westminster, about two years afterwards Henry converted it into a Bishopric, and gave it to Thomas Thirlbey, who having wasted the patrimony of the See, was removed to Norwich in 1550, and it again reverted to a Deanery. In 1556 the monastic institution was restored by Queen Mary, and continued till the accession of Elizabeth, who changed it to a collegiate church, of a Dean and twelve Prebendaries, as it still continues.

The Abbot of Westminster had archiepiscopal jurisdiction, and the keeping of the regalia, with a chief service at the King's coronation, which rights are now held by the Dean.

4. *Saint Albans*, founded by King Offa, in 794, in honour of St. Alban, who, in the year 283, first suffered martyrdom in this country. Richard Stevenage, alias Boreman, was the forty-first and last Abbot at the dissolution, and to prevent the destruction of the monastery, the townsmen paid £400 to the King, for the privilege of converting it into a parish church. When the east end of the church of St. Albans was repaired in 1257, some leaden chests containing relics were found, and on a plate of lead the following inscription: In hoc mausoleum inventum est venerabile corpus Sancti Albani, proto martyris Anglorum.

5. *St. Edmundsbury*, founded by Canute in 1020, as an atonement for the murder of Edmund, King of the East Angles, by Sirenus, the father of Canute; the thirty-third and last Abbot was John Melford, alias Reeve, or John Reve de Melford.

6. *Peterborough*, founded by Peada, the first christian King of Mercia, in the year 655; it was destroyed by the Danes in 870, and repaired by St. Adelwold in the reign of King Edgar,

who changed its ancient name of Medehamstede to that of Peterborough. Leofric, the fifth Abbot, at the time of the Conquest, held five abbeys in his hands at once, viz. : Burton, Coventry, Croyland, Thorney, and Peterborough. John Chambers, the forty-fifth and last Abbot, on the Abbey being converted into an Episcopal See, was appointed Bishop thereof, by Henry VIII., in 1541.

7. *Colchester*, founded by Euclo, afterwards steward to Henry I., in the year 1097. John Becke, the thirty-eighth and last Abbot, being attainted of high treason for denying the King's supremacy, was executed at Colchester, Dec. 1, 1539.

8. *Eversham*, founded by St. Egwin, third Bishop of Worcester, in the year 709. The fifty-first and last Abbot was Philip Hawford, alias Ballard, who on surrendering the Abbey was made Dean of Worcester.

9. *Winchelcombe*, founded by Kenwulf, King of Mercia, in 797, afterwards re-built by Oswald, Bishop of Worcester, in 985, and Germanus, Prior of Ramsey, appointed Abbot by King Edgar. Richard Mounslow was the twenty-sixth Abbot from Germanus at the dissolution.

10. *Croyland*, in Lincolnshire, founded by Ethelbeld, King of Mercia, in the year 716, to the honour of St. Guthlac, who, it is said, led the life of a hermit here, and by his sanctity, expelled certain frightful phantoms which infested the place ; this monastery was erected at a vast expense, it being situated in the deepest fens, where the soil is so moory that a pole may be thrust several feet into it. John Wells was the thirty-ninth and last Abbot.

11. *Battle*, in Sussex, founded by William the Conqueror, in the year 1067, to commemorate his victory over the British, and that prayers might be offered for the souls of such as were slain. John Hammond was the thirty-first and last Abbot.

12. *Reading*, founded by Henry I., in the year 1125. Hugh Faringdon, the thirty-second Abbot, together with two of his

monks, named Rugg and Onion, for refusing to surrender the Abbey, were hanged, drawn, and quartered, at Reading, in November, 1539.

13. *Abington*, founded by Cissa, King of the West Saxons, in the year 675. Thomas Penthecost, alias Rowland, was the fifty-first and last Abbot.

14. *Waltham*, founded by Earl Harold, afterwards King, in 1062. The last Abbot was Robert Fuller.

15. *Shrewsbury*, founded by Roger de Montgomery, Earl of Arundel and Shrewsbury, in 1083. Thomas Butler was the twenty-fourth and last Abbot.

16. *Cirencester*, founded by Henry I, in 1117. John Blake was the twenty-ninth and last Abbot.

17. *Gloucester*, founded by Osric, afterwards King of Northumberland, in the year 681. William Malverne was the thirty-second and last Abbot.

18. *Bardney*, in Lincolnshire, founded by Ethelred, King of Mercia, in the year 712. William Morton was the last Abbot.

19. *Hulm*, in Norfolk, founded by Canute, in 1031. William Rugge, alias Reppes, the thirty-seventh Abbot, was made Bishop of Norwich, by Hen. VIII., with permission to continue Abbot of Hulme.

20. *Thorney*, in Cambridgeshire, formerly called Ankeridge, from its being the favourite residence of a number of Anchorites. Saxulfus, a religious and devout man, founded at this place a monastery with hermit's cells, which was rebuilt by Ethelwold, Bishop of Worcester, in the year 972. Roger Blytt, or Blyth, was the thirty-second and last Abbot.

21. *Ramsey*, founded by Ailwine, Earl of the East Angles, in the year 979. John Lawrence was the thirty-fifth and last Abbot.

22. *Hyde*, in Hampshire, founded by Edward the Elder, in compliance with the will of his father Alfred, about the year 903. It was first called New-minster, to distinguish it from the Old-minster, or Cathedral of Winchester, within the precincts of whose cemetery it was founded; but the near

neighbourhood of these two great churches caused the monks of New-minster to transplant themselves, about two hundred years after the first erection of the monastery, to a place called Hyde, without the city walls of Winchester: at first it was governed by Seculars, but in the year 964 Ethelwold, Bishop of Winchester, introduced Monks and converted the college into a monastery. John Salcot, alias Capon, the thirty-eighth Abbot, having been instrumental in procuring Henry's divorce from Catherine of Arragon, was, on the dissolution of the Abbey, promoted to the Bishoprick of Salisbury.

23. *Malmesbury*, founded by Eleutherius, Bishop of Winchester, in the year 675. Richard Frampton was the forty-fifth and last Abbot. On the dissolution, one Stump, a rich clothier, purchased the Abbey of the King, and converted it into a parish church, and the offices into rooms for weaving.

24. *York, St. Mary's*, founded by Allan, Earl of Richmond, in 1093. William Dent, at the time of the dissolution, was the thirty-first Abbot.

25. *Selby*, in Yorkshire, founded by William the Conqueror, in the year 1069. Robert Roger was the thirty-third and last Abbot, and the Abbey was converted into a parochial church.

26. *Coventry*, founded by Leofric, Earl of Chester, and Godiva his wife, in 1043. Leofwine was appointed Abbot, and being in 1054 made Bishop of Lichfield, he ordained that his successors, superiors of this monastery, should be called Priors and not Abbots; upon his death Robert de Limesay, Bishop of Chester, about the year 1100, obtained the custody of the Abbey from Henry I., and removed his see thither, constituting it the chief cathedral of the diocese; but dying soon afterwards, the see reverted to Lichfield, when it was agreed, that the precedence in the style episcopal should be given to Coventry, and that both places should choose their Bishop alternately, and make one chapter, in which the Prior of Coventry should preside. Thomas Camsell was Prior at the dissolution.

27. *St. John's of Jerusalem*, in London, founded by Jordanus Briset, in the year 1100, and governed by a Prior, who was styled Primus Angliæ Baro. William Weston was the thirty-third and last Prior.

28. *Tewksbury*, founded by Oddo, Duke of Mercia, in 715. In the year 930, Haylwardus Snew built a monastery at Craneborn, to which he subjected the Priory of Tewksbury; but Robert Fitz-Hamon, in the year 1102, re-built the Abbey of Tewksbury, and changed Craneborn into a Priory, dependent upon Tewksbury. John Wech, alias Wakeman, the twenty-sixth Abbot, was made Bishop of Gloucester by Hen. VIII, and the monastery became the parish church.

29. *Taristock*, founded by Odgar, Earl of Devonshire, in 961. John Peryn was the thirty-sixth and last Abbot.

The total revenue of the Abbey lands, at their resignation into the King's hands, was valued at two million eight hundred and fifty-three thousand pounds, an immense sum in those days.

ABBOT. This title of dignity and honour among the Jews, appears to have been first assumed by the heads of monasteries, about the time of St. Jerome, towards the close of the fourth century. At which period they were subject to the Bishops and ordinary Pastors, and on Sundays frequented the parish church with the rest of the people; at length, probably on account of the distance of the monastery from any place of worship, the monks were allowed to elect a priest from their own community, and the choice generally fell upon the Abbot, whose functions, however, extended no further than to the spiritual assistance of his monastery, and he continued still in subjection to the Bishops, till about the middle of the fifth century, when the Abbots began to assume to themselves the title of Lord, with other badges of the episcopacy, particularly the mitre. In Britain the mitred Abbots, that they might be distinguished

from those of an inferior order, were called Abbots-sovereign and Abbots-general; and the heads of those Priories who had become exempt from the jurisdiction of the Bishop, took upon themselves the dignity of Lords-Priors.

On the dissolution of the Abbies and Monasteries by Hen. VIII, the title of Abbot was no longer permitted, with the exception of that of Hulm, in Norfolk, the Abbot of which Monastery being made by Henry, Bishop of Norwich, was by virtue of a private Act of Parliament, continued as Abbot of Hulm, and permitted to entertain a Prior and twelve monks; accordingly Montague, Bishop of Norwich, just before the grand rebellion, wrote himself in his leases, Richard, by divine permission, Lord Bishop of Norwich, and Lord Abbot of St. Bennets de Hulm, and which title it is said may still be assumed by the Bishops of Norwich.

ABDICATION. Dioclesian, the Roman Emperor, first acquired the glory of giving to the world the example of a monarch abdicating his crown, which ceremony took place on the 1st of May, A. D. 305. He afterwards retired to his country-seat in the neighbourhood of Salona, and died in 313. Several of the Saxon Kings, during the Heptarchy, abdicated or resigned their thrones to assume the monastic habit, and repaired to Rome, that they might receive the tonsure from the Pope's hands. James II. was declared by the British Parliament to have abdicated his crown in 1688.

ABLUTION. The antiquity of ablutions, as a religious ceremony, is equal to any recorded. Moses enjoined them; the Heathens adopted them, and they have been continued by Mahomet and his followers. The Egyptian priests had their diurnal and nocturnal ablutions. The Indians purified themselves in the sacred stream of the Ganges. The Grecians had their sprinklings, and the Romans their lustrations and lavations; the ancient Christians had their ablutions before

communion, which custom is still retained in the Romish church ; thus the practice of ablution has acquired a footing amongst most nations, and makes a considerable part of their established religions.

ABSOLUTIONS. (*See Indulgencies.*)

ABSORPTION, a term used for the disappearance of large tracts of land ; several instances of which have occurred both in ancient and modern times. In 1566, a considerable tract of mountainous country in China was absorbed into the earth, and all the towns with their inhabitants perished. In April 1647, Bassia, near Turin, in Piedmont, sunk with its inhabitants. In December 1735, one hundred yards of Portland Isle sunk into the sea ; and in 1737 a great part of the Cliff of Scarborough. Penguin Island, near Table Bay, at the Cape of Good Hope, disappeared in 1809.

As Islands have been destroyed and swallowed up by the sea, so also have they suddenly and unaccountably appeared ; thus an Island was raised in the Atlantic, near St. Michael's, in the year 1638, five miles in length. Also a mountain in the sea, near Puzzoli, which is called Mons Sanctus, or the Sacred Mount. Many similar phenomena might be mentioned.

ACADEMY. Some attribute the name and origin of Academies to Cadmus, the Phœnician, as being the first who introduced learning among the Greeks ; though others, with more propriety, to one Academus, who having, about 1250 B. C., a large grove at Athens, permitted the learned men of that city to assemble there for the purpose of philosophical conferences ; among these the followers of Plato were called Academics.

The moderns by an Academy understand a society of learned persons, for the cultivation and improvement of arts and sciences, by a communication of their discoveries to each

other ; the first Academy of this description was that founded by Ptolemy Soter, of Alexandria, about 286 B. C. Theodosius, the Younger, also established one at Constantinople. Others again assert, that Charlemaigne is entitled to the honor of having first founded an Academy of this description, which was composed of the most learned men in his court, the Emperor himself being a member.

Academies, considered as a kind of Collegiate School or Seminary, for the instruction of youth in the liberal sciences, were first established at Rome, in the time of Adrian, and were erected in various parts of Europe in the thirteenth century, under the denomination of Universities, as embracing the whole circle of science.

ACCENTS. Mr. West maintains that accents were originally notes, set over words to direct the several tones and inflexions of the voice requisite to give the whole sentence its proper harmony and cadence, and that they were invented by Aristophanes, the Grammarian, a native of Byzantium, about the time of Ptolemy Philopater, 200 years before Christ. Vassius, in his treatise on the Greek accents, endeavours to prove that accents to syllables are of modern invention, and that they are not to be found in any manuscript or inscription, till 170 years after Christ ; it is alleged by others that accentual marks were not in common use till about the seventh century, at which time they are first noticed in MSS.

ACHROMATIC. (*See Telescope.*)

ACROSTICS ; according to Cicero, the Sybilline Oracles were written in a kind of Acrostics ; some pretend to find Acrostics in the Psalms, particularly in those called the ABCDARIAN Psalms.

ACTOR. The drama in its original, consisted only of a simple chorus, who sang or recited an hymn in honour of Bacchus. Thespis first introduced an actor or persona to ease the chorus; Æschylus added a second person to conduct a dialogue with the first. Sophocles brought forward a third actor. The actors were highly esteemed by the Greeks, and we find Æschylus, Sophocles, and Aristophanes taking a part in their own pieces, yet the Romans held them in contempt. (*See Drama.*)

ACTRESSES, were unknown to the ancients, though Phrynichus, the pupil of Thespis, introduced women's parts on the stage, but these parts were always performed by men; hence one reason for the use of masks among them: Actresses, it is said, were not known on the English stage till after the restoration of Charles II., who has been charged with contributing to the corruption of manners by importing this usage from abroad, but this can be only partly true; the Queen of James I. performed a part in a pastoral; and Pryn in his *Histriomatrix*, speaks of Actresses in his time as women of a loose character, which was one reason of the severe persecution brought against him for that book.

ACTS. (*See Drama.*)

ADJUTANT. This officer was introduced into our military service in the latter part of the seventeenth century, and ranked above a Serjeant-Major; but the situation was not usually held by a commissioned officer till the French revolutionary war in 1793.

ADMIRAL. Anderson traces the name to the year 558, at which time, he says, there was an Admiral of the French navy, but authors differ very much as to the origin of this title. Sir Henry Spelman thinks, that both the name and dignity of Admiral were derived from the Saracens, and intro-

duced during the Crusades, by Edward I. into this country ; for Admiral, Admirante, in the Arabic tongue, signifies a Prince or Chief Ruler, and the Arabs called the commander of their navy by that name, as one of rank and consequence. The Sicilians, followed by the Genoese, borrowed this term from the Saracens, about the middle of the twelfth century ; and it does not appear that there are any instances of Admirals in this part of Europe, prior to the commencement of the thirteenth century. The first time this title is noticed in the English history, is in the year 1224, when Richard de Lacy was appointed Admiral. In the year 1294, there were three Admirals, one of whom, John de Botetort, was Admiral of the Yarmouth or North Station ; the second, William de Leiburne, Admiral of the Portsmouth or South station ; and the third, Admiral of the Western station. However, very soon afterwards, in 1306, there were but two officers of that rank, the one Admiral of the North, having the command from the Thames mouth to the Northern parts, and the other Admiral of the West, from the Thames mouth Westward ; which regulation continued till the year 1405, though in some few instances both these commands were vested in one person. The first who had this honor was John de Beauchamp, brother to the Earl of Warwick, in the year 1360 ; he was also Warden of the Cinque Ports. The next was Richard Fitz Allen, Earl of Arundel and Surry, who, in 1387, was the first person dignified with the title of Admiral of England, which was granted him by Rich. II. ; he held this office but one year, when the navy was placed under the command of two Admirals as before. In 1406, the commands were united in the person of John Beaufort, Earl of Somerset, who was the second that had the rank of Admiral of England.

The first who had the office of Lord High Admiral of England was John de Vere, Earl of Oxford, and Lord Great Chamberlain of England, in the year 1485, and this with little interruption continued till the resignation, in conse-

quence of the test act, of James, Duke of York, afterwards James II., when, in the stead of Lord High Admiral of England, Commissioners were appointed for executing his duties, which continued till 1685, when James II., on his accession, took the management of the Admiralty Offices into his own hands; on his abdication in 1688, they were again placed under the management of Commissioners, and have so continued to the present time, with a single exception, in favor of George, Prince of Denmark, the husband of Queen Anne, who, during his life, had the title of Lord High Admiral of England, and when the union took place in 1707, Lord High Admiral of Great Britain.

The Admiralty Court was erected by Edward III., though the jurisdiction is traced to the reign of John; its power was much enlarged in the time of Henry IV., when it first took cognizance of criminal as well as civil matters.

ADVENT. In the ancient church great austerity was practised during this season, as a pious preparation for the coming on of the feast of the Nativity; marriages were, consequently, prohibited; it was first directed to be observed A. D. 430; and formerly included five or six Sundays; the number was limited to four A. D. 1000.

ÆNIGMA. Gale supposes that the Egyptians borrowed the use of Ænigmas from the Hebrews. Solomon is said to have been particularly skilful in the solution of them; and we find, in Judges XIV. 12, 13, Sampson saying, "I will now put forth a riddle to you." The operation of cupping performed in ancient days by a machine of brass, the air being exhausted by fire, is ingeniously represented by the following Ænigma of Aristotle's, thus translated.

"I saw a man, who, unprovoked with ire,
Stuck brass upon another's back with fire."

Arist. Rhet.

ÆOLIPILE. An hydraulic instrument, which being filled with water and exposed to the fire, produces a strong blast of wind. This instrument is mentioned by Vitruvius, Des Cartes and others; and an Æolipile of great antiquity, made of brass, was lately dug up in the site of the Basingstoke Canal, and presented to the Antiquarian Society of London; it is in the form of a grotesque human figure, and the blast proceeds from its mouth. Dr. Platt gives an instance where the Æolipile is actually used to blow the fire. The Lord of the Manor of Essington is bound by his tenure to drive a goose, every New Year's Day, three times round the hall of the Lord of Hilton, while Jack of Hilton (a brazen figure, formerly a Saxon Idol, having the structure of an Æolipile) blows the fire.

ÆOLUS'S HARP, an instrument producing agreeable sounds on being exposed to a current of air. Thomson, in a note to his celebrated ode on this instrument, ascribes the invention of it to Mr. Oswald; but it appears to have been known to Kircher, and described by him in a book entitled *Magia Phonotactica et Phonurgia*.

ÆRA. This word, it is said, was first made use of by the Spaniards, to denote the period they became subject to the Roman Empire, under Augustus; the letters A:ER:A. signifying the words *Annus erat Augusti*. The following are the principal Æras or Epochas noticed in history.

The *Julian Period*, which has been adopted by modern chronologers, and from which all Æras and Epochas are deduced, was invented by Joseph Justus Scalenger, an Italian and professor of the belles lettres in the University of Leyden, in 1593; it is so called from its being composed of a series of 7980 Julian years, arising by the multiplication of the cycles of the moon, the sun and indiction, viz: $28 \times 19 \times 15$, into one another; and the year in which our Saviour was born,

which is the common Epocha throughout Europe, is usually computed to be the 4713 year of the Julian Period.

The *World*, according to Julius Africanus, was created 787 years before the Julian Period, answering to the year 5500 before Christ; but when this Epocha came to be admitted into civil use, eight years were added to it, that so every year thereof divided by 15, might exhibit the *Indiction*, which the Eastern Emperors used in their charters and diplomas: this by some has been called the *Epocha of the Period of Constantinople*, and was common among the Greeks and also among the Russians, which last have, however, lately admitted the Julian Calendar, and began their year from the first of January.

Panodorus, a monk of Egypt, in order to facilitate the computation of Easter, established the *Alexandrian or Greek Ecclesiastical Epocha*, assuming the creation of the world to have happened 5493 B. C. Eusebius, in his *Chronicon*, states it to have been created 4228 B. C.; Archbishop Usher and Dupin, 4004 B. C.; Melancthon, 3963 B. C.; Luther, 3960 B. C.; and Helvicus Calvisius and others, 3950 B. C.; but according to the computation of the *Jews*, and to which they still adhere, the world was created on the 7th day of October in the Julian Period 953, or 3761 B. C.

The *Olympiad Epocha*, so famous in ancient history, had its origin from the Olympic Games, celebrated at the beginning of every fifth year, to commemorate the victories of Hercules and other fabulous heroes. The utility of the Olympiad, as an established æra in the Greek chronology and history is well known; and Scaliger, who gave up a considerable portion of his time in an attempt to elucidate the origin of it, triumphs with no small degree of exultation, in the imagined success of his researches. "Hail!" says he, "venerable Olympiad! thou guardian of dates and æras! assertrix of historical truth, and curb of the fanatical licentiousness of chronologists!" &c. &c. Nevertheless, chrono-

logers are far from being agreed about the precise time at which the Olympiads began, some dating them from the victory of Corcebus the Elean, and others throwing their original thirteen, and even twenty-eight, Olympiads further backward. This was done by artificial chronologers, who, in order to accommodate the Olympiads to their systems and computations, have, as Sir Isaac Newton observes, added to their antiquity one hundred and twelve years. Chronologers, however, in all their computations, agree to reckon downward from that Olympiad, in which Corcebus the Elean was conqueror: the first year of which was the 776th B. C., answering to the Julian Period of 3938.

The *Epocha* of the *Building of Rome, or Urbis Condita*, U. C., according to Varro, whose opinion was adopted by the Roman Emperors in their proclamations, and the classical writers in general, and by most modern chronologers, commenced on the 20th of April, in the year of the Julian Period, 3961, or 753 B. C. Sir Isaac Newton, however, states that Rome was built in the fifteenth age after the destruction of Troy, which took place 904 B. C., and allowing twenty-one years to each of the fourteen kings who reigned in Alba, previous to the building of Rome, it would bring forward that Epoch to the thirty-eighth Olympiad, or 627 B. C.

The *Epocha of Nabonassar*, King of Babylon, used by Hipparchus, Ptolemy and others, commenced on the 26th Feb. 747 B. C.

The author of the *Vulgar or Christian Æra*, being the method of computation adopted by Christians in general, was Dionysius, by birth a Scythian, and Abbot of Rome, A. D. 507; he began his account from the Conception or Incarnation, by us popularly called Lady-day or the Annunciation, which he stated to have happened in the year 4713 of the Julian Period: before his time the Christians usually computed their years either from the Building of Rome, or

according to the orders of the Emperors and Consuls, and by other ways in use with the people among whom they lived. Anderson, in his *History of Commerce*, asserts that the Emperor Justinian was the first who, about the year 533, sanctioned this *Æra*; but it was not followed in Germany or France, till the reign of the Emperor Charles the Great, in the commencement of the ninth century, nor in Spain, till after the expulsion of the Saracens in the fifteenth century.

In England, this method of computation seems to have been practised soon after the conversion of the Anglo-Saxons by St. Augustin, and is first noticed by the Venerable Bede, in his ecclesiastical history, written in the year 731. Until the conquest by the Normans, the year was presumed to begin from the birth of our Saviour, but after the conquest, no settled period for the commencement of the year seems to have been determined upon, it being sometimes stated by our early historical writers as commencing on the birth, and at other times on the conception of our Saviour; about the middle of the fifteenth century, the method of beginning the year from Lady-day appears to have been the most common, and to have prevailed until the year 1752, when the Gregorian Calendar, altering the commencement of the year to the first of January, was established by Act of Parliament, though in foreign mercantile transactions the *Old Style* is in many instances continued. (*See Year.*)

The *Epocha of the Hedjira* commences on the 16th of July, the day of Mahomet's flight from Mecca to Medina, A. D. 622, and is used by all who profess the Mahometan faith, having been introduced by Omar the third Emperor of the Turks; this year consists of but twelve lunar months.

ÆTNA. The first volcanic eruption from this mountain is that mentioned by Diodorus Siculus, which compelled the Sicani to relinquish the eastern coast of Sicily, but the exact time is not known; the second, according to Eusebius,

happened 564 years before Christ, since which they have been frequently noticed in history. Livy records one which happened 121 B. C., and occasioned so much injury to the country, that the inhabitants were excused the payment of taxes to the Romans for ten years. And in the year 1329, the eruptions from the mountain continued with little intermission for a whole year, and created so much alarm to the inhabitants, that they clothed themselves in mourning. In the year 1669, the habitations of twenty-seven thousand people were destroyed, and near seventeen thousand people perished by one of these dreadful occurrences.

AFRICA. This quarter of the globe received its name from the Romans, but the etymology of the word is much disputed; it was anciently called *Lybia*, and considered as a part of Europe, the world being at that time divided into two parts only, viz : *Asia* and *Europe*; the period when Africa was accounted as a distinct portion cannot be exactly ascertained, the Romans being merely acquainted with those provinces which stretch along the Mediterranean Sea, from Egypt westward to the Straits of Gibraltar. Africa was first circumnavigated by the Phœnicians in the reign of Necho, King of Egypt, about 600 B. C.; they took their departure from a port in the Red Sea, doubled the Cape of Good Hope, and returned through the Straits of Gades to the mouths of the Nile. The destruction of Carthage by Scipio, 146 B. C., subjected Africa to the dominion of the Romans, from whom it was taken by the Vandals and other barbarous nations, A. D. 439. It was for a short time recovered by the Greek Empire under Belisarius, in 530, but was overrun and finally subdued by the Saracens and Moors, about the year 700. In the beginning of the sixteenth century, the Moors, apprehensive of being subdued by Spain, placed themselves under the protection of the Turks, and they are now subjects of the Ottoman Empire.

Vasco de Gama has the merit of first communicating a geographical outline of the southern and western parts of Africa, as ascertained by him, during his voyages in 1497 and 1499.

The first commercial voyage from England to the African shores was in 1536. Queen Elizabeth in 1588 granted a patent to some merchants at Exeter, for an exclusive trade to the rivers Senegal and Gambia, for ten years ; thus establishing the first company for trading to Africa.

AGATE. This mineral is mentioned by Theophrastus and Pliny, as chiefly used for ornamental works. The engraved gems, those precious remains of ancient art, are principally of Agate, and several of exquisite beauty are preserved in the cabinets of the curious.

AGRICULTURE. The art of cultivating the soil was carried to great perfection both by the Egyptians and Chaldeans, and no doubt from its importance must have attracted the attention of mankind from the earliest periods of the world. Hesiod, who is generally thought to have been contemporary with Homer, was the first among the Greeks who wrote on this subject. According to his account, the earth originally produced corn without cultivation, and this era he entitled the Golden Age : afterwards the earth became unfruitful, and the Greeks for a long time subsisted on acorns and berries, till Ceres introduced the science of Agriculture. Hesiod entitled his poem " Weeks and Days," because Agriculture requires an exact observance of times and seasons.

The early Britons acquired their knowledge of husbandry from the Gauls, yet it was little attended to till the arrival of the Romans, who by their encouragement of it, especially under Agricola, were enabled to export considerable quantities of corn annually to Rome.

AIR. Aristotle, who flourished about 340 B. C., observed that a bladder inflated with air weighed more than when it was empty ; therefore, that the air had the property of gravity was known to the ancients. Its elasticity was also noticed by Ctesibius, of Alexandria, 120 B. C. Galileo, about the year 1630, proportioned the weight of air to water, and his scholar Torricelli improved on the discovery by substituting quicksilver.

AIR BALLOON. The Romances of almost every nation have recorded instances of persons being carried through the air, both by the agency of spirits and by mechanical inventions ; but no rational principle appears to have been thought of, by which this might be accomplished, till near the end of the thirteenth century, when Friar Bacon informs us he knew how to construct a machine, capable of transporting a person through the air like a bird, and that the experiment had been successfully tried, by means of two large thin shells or hollow globes of copper, which being exhausted of air, and thus made lighter than the common atmosphere, were found capable of supporting the weight of a person sitting on a chair. No further experiments on the subject are noticed till the year 1709, when Friar Guzman, a Portuguese projector, applied to his sovereign to encourage his invention of a flying machine, which did not then prove successful ; but in 1736, he constructed a wicker basket of about seven feet diameter, covered with paper, which on being deprived of air, rose to about two hundred feet from the ground, and the effect was, even in those days, attributed to magic.

In 1766, Mr. Henry Cavendish, among other discoveries, ascertained the weight and other properties of inflammable air to be about seven times lighter than that of common air, and thus revived the subject of ærostation, and most probably suggested to Stephen and John Montgolfier, natives of An-

honey, in France, the mode of inflating their balloons by means of rarified air. They first made the experiment in 1782, with a fine silk bag, of about 40 cubic feet in capacity, the air being rarified by applying burning paper at the lower aperture, and the bag rose to the height of about 70 feet. In the following year, one on a larger scale was exhibited at Paris, having a sheep, a cock and a duck placed in a basket attached to the balloon, which ascended to the height of 1500 feet, and in eight minutes dropped to the ground at the distance of two miles from Paris, without any injury to the travellers.

Pilatre de Rozier was the first person who ventured to ascend in a balloon, which took place at Paris in October, 1783. The balloon was constructed upon the principle before mentioned, and was forty-eight feet in diameter, and seventy-four in height. M. Pilatre having placed himself in the gallery, the machine was inflated, and being fastened to the ground by ropes, ascended to the height of 84 feet, and at another time to the height of 330 feet; he afterwards ventured, in company with the Marquis de Orlandes, to make an aerial voyage; they ascended on the 21st November, 1783, from the Chateau of Muette, to upwards of 1000 yards, and after a journey of twenty-five minutes round the city of Paris, safely alighted beyond the Boulevards; this intrepid aeronaut soon afterwards unfortunately perished in one of his aerial excursions, in consequence of his balloon taking fire.

In 1783, Messrs. Roberts and Charles constructed a balloon with *inflammable* instead of rarified air, in which they ascended from Paris, and alighted in safety at the distance of 27 miles from the city. The merit, however, of this discovery, is due to Dr. Black, of Edinburgh, who first suggested the idea in his lecture in 1768: it was afterwards experimentally tried by Cavallo, of which an account was read to the Royal Society on the 20th of June, 1782. On the 7th January, 1785, Mr. Blanchard and Dr. Jefferies determined upon the

hazardous experiment of crossing the Straits of Dover in a balloon; they departed from Shakespeare's Cliff, and after some little difficulty, safely reached the opposite coast, and descended in the forest of Guinnes. In 1793, the French Republic established an academy for æronauts, at Meudon, where a balloon was kept constantly filled and ready for experiments. On the 26th June, 1794, Coutel, captain of the *Æronautic Corps*, ascended twice with the *Entreprenant* balloon, to the height of 480 yards, and conducted the important service of reconnoitering the hostile armies at the battle of Fleurus; he was accompanied by a General and an Adjutant, and by means of preconcerted signals, described the position and manœuvres of the enemy, and carried on a correspondence with General Jourdan, the Commander of the French Army.

The parachute was invented by M. Garnerin, in 1802, to facilitate the descent from the balloon in case of accident.

AIR-GUN. This machine, for expelling bullets by the expansive force of air, is first noticed in the *Elemens d' Artillerie*, of David Rivant, the preceptor to Louis XIII.; he gives the merit of the invention to Marin, a burgher of Lesieux, who presented one to Hen. IV. of France, about the year 1592.

AIR-PUMP. Otto de Guericke, the celebrated Consul of Magdeburgh, is the inventor of this instrument, and exhibited his first public experiment with it, before the Emperor and the States of Germany, at the breaking up of the Imperial Diet at Ratisbon, in the year 1654. Boyle, however, with the assistance of Dr. Hooke, very greatly improved upon the invention, and hence, or rather from the great variety of experiments that illustrious author applied it to, he has by many been considered as the inventor; and the instrument itself, is frequently named after him the *Boylean machine*.

ALABASTER. This mineral is noticed by Pliny, who mentions that vases were frequently made of Alabaster stone, for the purpose of containing odoriferous liquors.

ALCHEMY. The origin and antiquity of this science are much controverted ; if regard may be had to legend and tradition, it must be as old as the flood, but in effect, not one of the ancient poets, philosophers, or chemists make mention of it. It is first noticed by the Empress Eudocia, in her Greek dictionary, wherein she observes as follows, concerning the famous golden fleece : "Dionysius, the Mytilenean, says, that a man, whose name was Krias, (which signifies a ram), was the pedagogue of Phryxus, and that the sheep-skin had a golden fleece, not conformable to poetic assertion, but that it was a book written in skins, containing the manner in which gold ought to be made, according to the chymic art." This Dionysius lived sometime prior to Cicero. Manetho, who lived in the time of Ptolemy Philadelphus, also states, in his fourth book of *Apoteles Matica*, "that Venus, in conjunction with Phaeton, (the sun), points out makers of gold, and workers of Indian ivory." Alchemy seems to have been first regularly studied some short time prior to the Christian Era, and to have been known to the Romans, as both Cæsar and Dioclesian directed all books which treated upon the subject to be burned, and banished such as practised the art ; though the word itself can be only traced to the time of Constantine, in whose reign Julius Firmicus Maternus, speaking of the influence of the heavenly bodies, affirms in his *Mathesis*, "that if the Moon be in the house of Saturn at the time a child is born, he shall be skilled in *Alchemy*." The art was much practised in Greece, in the time of Zosimus the Panoplite, who lived about the commencement of the fifth century, and wrote an express treatise on this subject, which he entitled "*The Divine Art of making Gold*."

Alchemy was introduced into Europe in the thirteenth cen-

tury, when the learning of the east had been brought hither by the Arabians, and became the favourite pursuit of Albertus Magnus, Roger Bacon, Raymond, Lally, and others, not only with the view of changing the baser metals into gold or silver, but also under the expectation of discovering an universal medicine, which would cure all disorders, and prolong the duration of human existence to an indefinite period, an idea first suggested by Gaber, an Arabian, about the middle of the eighth century. The writings of these able men raised the study of Alchemy to a degree of credit, which it little merited, especially among the ecclesiastics, who possessed, at that time, almost all the learning of the age; and even a Pope, John XXI. was weak enough to assert, in his treatise on the art of transmutation, that he had himself made 200 ingots of gold, of one hundred weight each. Rymer, in his *Fædera*, first notices the introduction of the art into England—he states, that, in the reign of Edward IV., a license was granted to one John Mistleden and his three servants, “to work in the philosophical art of transubstantiating imperfect metals into pure gold and silver, as they are found in the mines.” Nevertheless, we have had as severe laws against Alchemy and multiplying of metals, as against coining itself.

ALCOHOL. Neither the Greeks or Romans have noticed the spirituous part of liquors which have undergone the vinous fermentations; the preparation of it from wine, and even the discovery of Alcohol, or pure spirit itself, is ascribed to Arnold de Villa Nova, who lived in the thirteenth century.

ALCORAN. In Arabic, “The Book,” a title given by way of eminence to the Mahometan gospel, which the Mahometans state was given to Mahomet (himself an illiterate man), by the Angel Gabriel, in small quantities, only a verse at a time, and in different places, during a period of twenty-three years.

There are seven principal editions of the Alcoran, two at Medina, one at Mecca, one at Cufa, one at Bassora, one in Syria, and the common or Vulgate edition. The first contains 6,000 verses; the others surpassing this number by 200 or 236 verses: but the number of words and letters is the same, in all, viz: 77,639 words, and 323,015 letters. The Koran is universally allowed to be written with the utmost elegance and purity of language, in the dialect of the tribe of Koraish, the most noble and polite of all the Arabians, and is confessedly the standard of the Arabic tongue.

ALCOVE. No mention is made either by Vitruvius or Pliny in their description of the Roman villas, of any recesses in their sleeping rooms for beds, except such as have windows, which may therefore be considered as separate rooms. This stile of architecture originated in Africa or Asia, for we read of alcoves perpetually in the Arabian stories, and in the description of Asiatic palaces and gardens, it was introduced among the Spaniards by their Saracen conquerors, and by them called Alcoba, which, in the Spanish language, signifies a vaulted cabinet in a chamber, open on one side, without windows, and large enough to contain a bed. After the expulsion of the Moors by the Spaniards, at the close of the fifteenth century, Alcoves were introduced into Germany, France, England, and other nations. Swinburne mentions two Alcoves yet remaining in the royal bed-chamber of the Moorish palace of Alhambra, at Grenada, which are probably the oldest in Europe.

ALDERMAN. Saxon, *Ælderman*; formerly the second rank of Nobility among our Saxon ancestors, equal to the Earl of the Dano-Saxon. There were also several magistrates who bore the title of Alderman, and, according to Spelman, the *Aldermanus totius Angliæ* seems to have been the same officer who was afterwards styled *capitalis justiciarius*

Anglice, or chief justice of England.—Aldermen were first appointed to cities in the year 862.

ALE. The art of making an infusion of corn, and particularly of barley, similar to our Ale, was known and practised in very ancient times, among the Egyptians. Diodorus Siculus notices the early introduction of this beverage among the Gauls, who, he says, made a strong liquor of barley, which they called Zyphus. The natives also of Spain, France, and of Britain, were acquainted with this liquor under the different appellations of *cerea*, *cerevisia*, and *cumi*. Pliny mentions, in his natural history, that all the nations who inhabit the west of Europe have a liquor with which they intoxicate themselves, made with corn and water, and which is brewed so well that it will keep good for a long time. “So exquisite is the ingenuity of mankind in gratifying their vicious appetites, that they have thus invented a method to make even water itself intoxicate.” After the introduction of agriculture into Britain, Ale or beer was substituted for mead, and became the general drink of its inhabitants; it was also the favourite liquor of the Anglo-Saxons and Danes, and is of such antiquity in England, that we find mention of it in the laws of Ina, king of Wessex. The beer used at the noblemen’s tables was commonly of a year or two old, brewed in March, and the price of it in London in the time of Edward II. was a penny a gallon.—The first assize of Ale was fixed by statute, 31 Hen. III.

Ale, or *public-houses*, are noticed in the Saxon period under the names of *Eala-hus*, *Cumen-hus*, and *Win-hus*—Ale-house, Inn, and Wine-house, they generally assumed the sign of the chequer-board, some say to intimate that the game of draughts might be there played; also, from the colour of the board, which was red, and its similarity to a lattice, the term, *red lattice*, is frequently made use of by our ancient writers, to signify an Ale-house.—Ale-houses were first licensed in 1551.

ALGEBRA. The origin of this art, as well as that of most other branches of mathematical science, is involved in obscurity—there are, indeed, traces of it to be found in the works of some of the earliest philosophers and mathematicians, as Euclid, Plato, and Archimedes, the subject of whose writings must necessarily have led them to the discovery, and, in some measure, to the application of this science: but the most ancient treatise on that part of analytics, which is properly called Algebra, now extant, is that of Diophantus, a Greek author of Alexandria, who flourished about the year of our Lord 350, and which was first published by Xylander in 1575.

Camden attributes the invention of Algebra to an Arabian, called Mahomet ben Musa, who lived about the middle of the eighth century, and obtained the appellation of Geber, from his knowledge of this art. But wherever Algebra was invented, or first cultivated, the science was brought into Europe in the commencement of the twelfth century, and the earliest European treatise on the subject now known, was written by Lucas Pacioli, or Lucas de Burgo, and published at Venice in 1457: he acknowledges, however, that he derived considerable assistance from a work written upon Algebra, by Leonard, of Pisa, about the year 1202. In the year 1590, Vieta, a French mathematician, introduced what he called his specious arithmetic, which consisted in denoting the quantities, both known and unknown, by the letters of the alphabet, the former by the consonants, and the latter by the vowels, as also the $\overline{\hspace{1cm}}$ vinculum over compound quantities. The characters $+$ plus, $-$ minus, and $\sqrt{\hspace{1cm}}$ are attributed to Stephilus, who lived in 1536: the sign of $=$ equality, to Robert Recorde, an Englishman, in 1552: the character of \times multiplication, and that of proportion $::$: to Oughtred, also an Englishman, who in his *Clavis Mathematica*, printed in 1631, considerably improved Vieta's method, and appears to have first applied Algebra to the purpose of geometry.

ALKALI, a mineral salt, found on the shores of several lakes in Lower Egypt, the Borith of scripture, and known to the ancients under the name of Natron or Nitre. Alkali, by us distinguished into Potash and Soda, was also procured by the Arabian chemists, from the ashes after the combustion of vegetables and minerals, and was termed by the Romans Lixiviary Ashes, and used by them for the purpose of scouring cloth, and with oil for ointments; but the *volatile* salt or alkali procured by the *distillation* of vegetable, and especially animal matter, is first noticed by modern chemists about the middle of the last century. The purest in which it is known to us is that of a gas, which readily unites with water, but unless combined with some other substance, this Alkali has never been procured in a solid state; when made to unite with oils, it forms ammoniacal soaps. Eau de Luce, which is the union of oil of amber with ammonia, is first noticed by Dusie, in his "Elaboratory Laid Open," published in 1758.

ALLEGORY. The practice of Allegorical interpretation was a favorite mode of delivering instruction in ancient times; for what we call fables, or parables, are no other than Allegories. This method originated among the Egyptians, and was adopted by the Greek philosophers for the purpose of giving a rationale of their faith, and preventing the people from being shocked at those absurdities which the poets had introduced into their religion. The Jews also made use of Allegories to interpret the sacred writings, in which they were followed by the primitive writers on christianity.

ALLOY. The coins of Philip, the father of Alexander, are the earliest noticed as having Alloy in them.

ALLUM. This salt, which is of such extensive utility in many of the Arts and Manufactures, was unknown to the

ancients ; at least they were only acquainted with the native Plum Allum, procured from Lipari and the neighbouring volcanic islands. What the Romans called Alumen was vitriol ; the term Allum being first used in the eleventh century. It was manufactured at Rocca in Syria, and also at Smyrna, in the twelfth century ; and the method of procuring it was brought from thence into Europe, by Bartholomew Perdix, a Genoese merchant, who founded Allum Works at Iseria, in 1458 ; a manufactory was afterwards established near Rome, by John de Cestro, in 1465, with such success, that it was taken under the immediate protection of the Popes, who, with the view of monopolizing the trade, prohibited its importation from the East, and compelled the workmen to take an oath of secrecy, as to the mode of preparing it ; however, Sir Thomas Chandoler, of Gisborough, ventured to entice some of the Pope's workmen into England, and erected Allum Works at Whitby, in 1607, for which he had the honour of being personally excommunicated. These works were considerably improved by Sir John Bouchier, in 1609, and much encouraged by James, I., who, as well as his son Charles, prohibited the importation of Allum into this country ; but though the art of manufacturing Allum had not been acquired in England previous to the time above stated, yet the salt itself was introduced about the middle of the fifteenth century ; and Hen. VII. made a monopolizing grant of this commodity to Augustine Chigi, a merchant of Sienna.

ALMANAC. Some contend that the Egyptians published the predictions of events annexed to the months prior to the Arabs, though the word itself, Almanac, is derived from two Arabic words, Al and Manak, signifying the diary. All the classes of Arabs, and indeed the Asiatics in general, are much given to the study of astronomy and astrology, and they engage in no business of importance without previously consulting the stars. From these people the custom of forming

astrological compositions, passed into Europe, and Almanacs have every where to this day, not only retained their old Arabic name, but in many European nations are still interspersed with a great number of astrological rules for regulating the various transactions of life. The Northern nations appear to have used a kind of Almanac, which was introduced into this country by the Danes, called the Runic or Log Almanac, and comprehended the order of the feasts, dominical letters, days of the week, and golden number, with other matters necessary to be known throughout the year. The external figure and matter of these Kalendars were various; sometimes they were engraved on one or more wooden leaves, bound together after the manner of books, sometimes cut on the scabbards of swords and daggers, but most usually on that of walking-staves or sticks, known under the name of Clogs. The characters engraven on them, are in some, the ancient Runic, in others the later Gothic characters of Ulfinus. Dr. Plot, in his "Perpetual Staffordshire Almanac," has given a description and figure of one of the Clogs found in Staffordshire.

The modern Almanac answers to the *Fasti* of the ancient Romans; for some time after the introduction of printing, it was not merely confined to one year or annual, but calculated for several years; to which was added the *Practica*, or astrological predictions, with the proper days for taking medicine, &c. One of this description was published at Nantes, in 1463. John Miller, the celebrated astronomer, generally known under the name of Regiomontanus, appears to have been the first in Europe who reduced Almanacs into their present form and method; he published one in 1474, in which he foretold the eclipses and other phases of the moon, and calculated the motions of the planets, &c. In 1579, an Almanac was published in London, under the title of *The Shepherd's Calendar*.

The Oxford Almanac, adorned with hieroglyphicks, and

containing also a short history of the University, was first drawn by Maurice Wheeler, Canon of Christ Church, in 1673 ; it so injured the sale of the other Almanacs, that the Stationers' Company paid the University Printers an annual sum to put a stop to it, since which the Oxonians have only published the present sheet Almanac, which probably was the first of that description.

The Nautical Almanack and Astronomical Ephemeris, was first published by Dr. Maskelyne in 1767, under the direction of the Commissioners of Longitude, and has been continued ever since.

ALMONDS, were brought from Greece to Marseilles by the Phocæan colonists, and imported in the middle ages.

ALMONER. An ecclesiastical officer of great antiquity, whose duty it was during the Saxon æra to collect the broken meat, &c. from the king's table, and distribute it to the poor who sat in the streets expecting it.

Alms-houses are first noticed in the time of Justinian. During the Saxon Government they were attached to monasteries, and generally built near the churches. Anthony Wood says there were few houses of this description previous to the Reformation, after which they were usually built for the decayed servants of the Founder's family.

The *alms-box* was placed in the cathedrals at Rome, by direction of Innocent III., at the commencement of the thirteenth century, and in the parish churches of this country in 1535.

ALPHA and **Omega**, being the first and last letters in the Greek alphabet are designed in the divine writings, to signify the beginning and end of all things ; and in the early ages, these two letters were made the symbol of christianity, and engraved on the tombs of the christians, to distinguish them from those of idolaters, which custom had its rise prior to the age of Constantine.

ALPHABET. Many have supposed the method of expressing our ideas by visible symbols called letters, was an immediate revelation from the Deity, and the five books of Moses the most ancient compositions, as well as the most early specimen of alphabetical writing. By some it is asserted that the writing of every people on earth may be referred to one common original, without a single instance of independent discovery; for, among the European nations, none are to be found who can pretend any right to the discovery of letters, all of them having derived the art from the Romans, excepting the Turks, who had it from the Arabians. The Romans never laid claim to the discovery, but confessed they derived their knowledge from the Greeks, and the latter that they received it from the Phœnicians, who, as well as their colonists, the Carthaginians, spoke a dialect of the Hebrew, scarcely varying from the original. The Coptic or Egyptian resembles the Greek in most of its characters, and may therefore be referred to the same original. The Chaldee, Syriac, and later Samaritan letters, as well as the Ethiopic, Arabic, and Persian, may be traced to the same source.

Some maintain that books were written, and consequently letters known, before the deluge. Dr. Parsons, in his *Remains of Japheth*, p. 346, supposes letters to have been known to Adam; and the Sabeans produce a book, which they pretend was written by him. According to Josephus, Abraham taught the Egyptians both arithmetic and astronomy; and Sir Isaac Newton admits that letters were known in the time of that patriarch, for many centuries before Moses.

The common received opinion is that the Phœnicians have the best claim to the invention of an alphabet, and that Cadmus, who was a Phœnician, introduced the first Greek alphabet into Bœotia, where he settled B. C. 1500. The Greek capitals in their present form appear complete in the year 242 B. C.

The Latin alphabet obtained its name from that part of Italy formerly called Latium, whence the Romans were am-

bitious of deducing their descent. Both Pliny and Tacitus affirm, that the form of the letters was nearly the same as the original Greek.

The W was a letter unknown, as to form and place, to the ancient Hebrews, Greeks, Romans, and Goths, and was peculiar to the northern nations.

Mr. Astle denies the existence of an alphabet among the Irish druids, and also the invention of the gothic letters by Ulphilas, in the time of the emperor Valens; he further contends, that the Britons had no use of letters before their intercourse with the Romans, and that the Saxons on their arrival in this country were also totally unacquainted with letters, and adopted those which they found here.

ALTAR. The Jews, and many Christian writers, attribute the origin of Altars to Adam; others to Enoch. Herodotus maintains that the Egyptians were the first who consecrated to the Gods temples, statues, and altars. However, the earliest altars of which we find any express testimony, are those of Noah and Abraham.

Among Christians the term, Altar, is used to signify the table placed on the eastern side of the church, for the celebration of the eucharist. From the unanimous suffrage of most of the fathers that lived within 300 years after Christ, and of our most learned reformers, it appears that for above 250 years after the promulgation of christianity, the common altars used in churches were tables, and that these were sanctioned by a decree of Sixtus II., who was bishop of Rome in the year 257. But the council of Paris, held in 509, ordered that the altars should for the future be built of stone, and they then took the resemblance of tombs: thus we read in church history that the primitive christians chiefly held their meetings at the tombs of the martyrs, and celebrated the mysteries of religion upon them. About the year 750, Pope Gregory the

Great authorised the burial of bishops, princes, and people of rank within the body of the church, and consequently the remains of the saints were either removed into the church, or as frequently happened, the church was built upon the spot where they were buried—in either case, the tomb became the altar; and to this day, altars in all the catholic churches have the relics of some saints inclosed in them: the horns of the altar, according to Du Cange, is that side of it where the epistle and gospel are read. In ancient cathedrals there was a ciborium, or arch, over the altar, in imitation of the propitiatory, which covered the ark, or otherwise there was a canopy hung over the altar, and curtains, called the tetravellum, drawn round to prevent the priest being disturbed by the sight of the spectators; under the canopy, or ciborium, hung the pix, or box, containing the host, commonly a dove, of goldsmith's work; over the altar was the palla, carried out against fires; and over the pall, the corporal, always made of linen, according to an order of Sextus I.

In the year 1550, Bishop Ridley issued injunctions for taking down all altars, requiring the church-wardens of every parish to provide a table decently covered, and to place it in such a part of the choir or chancel as might be most convenient, so that the ministers and communicants should be separated from the rest of the people: some of the bishops refused to comply with this order, and suffered themselves to be deprived of their bishopricks for contumacy.

AMALGAMATION. The knowledge of the solvent power which mercury exercises over various metals, especially gold, was not only known to the ancients, but, as is related by Pliny, actually employed by them in the separation of gold from the baser materials, and in the gilding of silver. Mercury was first applied to the extraction of silver from the ores of Peru and Mexico, by Fernandez de Velasco, in 1571.

AMBASSADOR. The custom of sending ambassadors dates from the origin of civil societies. As soon as mankind was divided into distinct nations, differences would arise which must be amicably settled by the interference of neighbours, guarded against by the protection of the more powerful, or decided by wars, ending in reconciliation: but the modern practice of deputing ambassadors to foreign courts is generally ascribed to Cardinal Richelieu, and Raymond de Bécarría, Baron of Forqueveaux de Pavie, Knight of the Order of St. Michael, is stated to have been the first public minister who resided permanently at a foreign court. He was sent as Ambassador from the court of France to Spain in 1565: the title of Excellency was first given to them at Rome in 1593. In May, 1650, the British Ambassador at the court of Madrid was killed by some English cavaliers. In 1654, Don Pantaleon Sa, brother to the Spanish ambassador, resident at the British court, was beheaded on Tower-hill, for stabbing a gentleman, whom he took for a Colonel Gerrard, that had insulted him. In the same year, the Portuguese Ambassador was arrested for debt, as was also the Russian Ambassador in July, 1708, for a debt of £50, which circumstance gave rise to a law for the protection of the persons of Ambassadors in civil actions, as also of their servants. In the year, 1715, Bertram de Zara, the Ambassador from Morocco, died in London, and was buried at the public charge in Westminster Abbey.

With respect to the rank of foreign Ambassadors residing at the same court among themselves, the nuncio of the Pope was always considered as holding the first rank at the French court, and used to compliment the king on particular occasions in the name of the whole diplomatic corps. In other courts, the French Ambassador had the precedency before those of any other kingdom—though this seems to have been disputed at the public entry of the Swedish Ambassador into London in September, 1661, when there happened a quarrel

respecting precedence between the French and Spanish Ambassadors, near Tower-hill, and many of their servants were killed ; but, at last, the Spanish Ambassador's coach had the good fortune to get before the Frenchman's : however, in 1662, Spain conceded this privilege to the French Ambassador, no other continental power disputing it. In 1786, the French Ambassador at the Court of Berlin was much offended because the Queen of Prussia sat down to cards with the Russian Ambassador, whilst he was only invited to the table of the eldest daughter, then the Princess Frederika, afterwards Duchess of York.

AMBASSADRESS. The first lady mentioned as having been employed on a diplomatic mission, was Margaret of Austria, who, as Ambassadress, signed the league of Cambray, in 1508; and, afterwards, the confirmation of the peace, concluded at Cambray, in 1529, was signed by the same Margaret of Austria, in the name of Charles V., and on the part of Francis I., of France, by Louisa, Duchess of Savoy. In 1645, Madame de Marachale de Guebriant was appointed by Louis XIV. Ambassadress extraordinary, to consign Mary, of Consagues, to her husband, the King of Poland, who had married the Princess by procuration.

AMBER. The origin of this bituminous substance has in vain been sought after both by the ancients and moderns. Thales, one of the Greek philosophers, first noticed its property of attracting light substances, and, for this reason, attributing a certain kind of life to it : he called it *electron*, from whence the modern term, *electricity*, is derived. Amber was formerly supposed to possess many medicinal virtues, and was held in high estimation by the Romans, who made it into bracelets, necklaces, and other articles of female ornament.

AMERICA. Some have supposed this portion of the

world to have been known to the Phœnicians and Egyptians, and to have been the island Atlantis, mentioned by Plato. Cornelius Nepos relates that the king of the Suivi presented to the Roman Consul of Gaul certain Western Indians, who had been shipwrecked on the coast of Germany; and it is also said, that Hanno and Hamilcar having acquainted the Senate of Carthage of the discovery of a large island, far west of the Old Continent, the Senate determined upon suppressing the information, lest their people should be induced to migrate thither, and thereby depopulate the Carthaginian state. The Welch historians also contend for the honour of the discovery; they state that Madoc, a younger son of Owen Guyneth, prince of North Wales, about the year 1170, embarked in a ship from the north-west part of Ireland, and sailing westward, came to a country where he observed many strange things. On his return to Wales, he provided himself with ten ships, and prevailed upon a number of people of both sexes to accompany him, for the purpose of forming a settlement in that land, from whence neither he nor any of his company ever returned. Some relations of the Spaniards, who affirm that on their first arrival in America, they found the native Indians paid honour to the Cross, would seem to give some slight appearance of credit to this story. There are also Welch writers, who conjecture they have found an affinity between several words in the native Indian language of the Americans and those of the Welch tongue.

It is, however, now generally admitted, that America was first discovered by Christopher Columbus, a Genoese, on Friday, the twelfth day of October, 1492, he himself being the first European who set foot in the New World. Robertson in his history of the country relates, that he landed in a rich dress, with a naked sword in his hand, followed by his men, and all of them kneeling down kissed the ground which they had so long desired to see; they next erected a crucifix, and prostrating themselves before it, returned thanks to God

for conducting their voyage to such a happy issue. Columbus named the island he had discovered San Salvador. The English call it Cat Island, and the natives Guanahatin, it being one of that cluster of islands denominated the Bahama Isles.

This country was for a long time considered as forming a part of the Old Indian Continent, and was therefore called the West Indies, which appellation it retains to the present day. It received the name of America from Amerigo Vespucci, a Florentine gentleman, who in 1499, accompanied some adventurers to the New World, and having on his return to Europe, drawn up, with some elegance, an amusing history of his voyage, together with some judicious observations upon the natural productions, the inhabitants, and the customs of the country which he had visited, the country itself became gradually to be called after him: "thus the bold pretensions of a fortunate impostor have robbed the discoverer of the New World, of a distinction which belonged to him; the name of Amerigo has supplanted, by the universal consent of nations, that of Columbus, and mankind may regret an act of injustice, which having received the sanction of time, it is now too late to redress." The first colony on the American Continent was established at Santa Marie il Antigua, in the Gulf of Darien, 1510, under the command of Vasco Mingez de Balboa, who afterwards crossed the Isthmus, and in the year 1513, discovered the Southern Ocean, near Panama, to which place, in 1517 he removed the colony. Mexico was subdued by Cortes in 1521; Peru, by Pizarro, in 1532; Brasil was discovered by Pedro Alvarez Cabral, a Portuguese, in the year 1500; but a regular settlement was not formed at San Salvador before the year 1649.

North America and Newfoundland were discovered by Sebastian Cabot, under a commission from our Henry VII. in June 1497, and the first British Colony was established at Virginia, August 25th, 1585. In the year 1774,

the colonists resisted the authority of the British Government, which attempted to impose a tax upon them, under the denomination of a Stamp Act, afterwards altered to a duty on tea; on the 14th of April a number of men disguised in masks, destroyed the tea sent from this country, and then lying on board the vessels in Boston harbour; and on the 19th of the same month, a skirmish took place between the English and Americans, at Lexington, about two miles from Boston, which was the commencement of a war, that led to a final separation between the two countries: the Americans declaring themselves independent of the British crown, on the 4th of July, 1776. The defeat and capture of Earl Cornwallis on the 29th of October, 1781, terminated the war in favor of the colonies, and the independence of America was acknowledged by the British government on the 30th of November, 1792, and ratified on the 3d of September, 1793.

The colonies of New Britain, Canada, New Brunswick, Nova Scotia, St. John's Island, and Newfoundland, continued faithful to Great Britain.

Most of the other European colonies in America have, within the last few years, declared themselves independent of their mother country, and this has been in some measure acknowledged by the European powers having appointed accredited consuls at their courts.

AMETHYST. This precious stone is said by Pliny to derive its name from its colour, which resembles wine mixed with water. The ancients supposed it had the power of preventing intoxication, and therefore the votaries of Bacchus used to wear it about their necks.

AMIANTHUS. An argillaceous stone, bearing a near resemblance to the asbestos, (*which see*).

AMPHITHEATRES—are of Roman invention, and origi-

nally, according to Maffei, consisted of two large semi-circular theatres of wood, which were united by hinges, and turned upon pivots. Cæsar first erected a permanent one of wood ; afterwards, several others were constructed, one of which, in the reign of Tiberius, A. D. 27, fell during the celebration of the games, and 50,000 persons were either killed or dangerously hurt. Pompey, others say Statilius Taurus, in the reign of Augustus, erected one of stone : but the most magnificent Amphitheatre was that commenced upon by Vespasian, and finished by Titus, A. D. 79, called the Coliseum, and capable of accommodating 87,000 spectators, having an arena, in which from five to nine thousand wild beasts were exhibited at one time. In the year of Rome, 490, the first gladiatory combats were exhibited in that city, and in the year 502, wild beasts were introduced among the public spectacles of Rome. All the Amphitheatrical amusements were left off in the sixth century, and in the succeeding ages tilts and tournaments were, in their stead, performed in the arena.

AMPUTATION was not practised by the ancient Greeks, at least no mention is made of its having been performed in the time of Hippocrates, the father of medicine, who was born about 460 years before the christian æra. Celsus, who lived during the government of Tiberius, is the first writer who has taken any notice of the subject, and that in a very concise manner : and, as the only mode, for many ages, of suppressing the bleeding, was either by searing the orifices of the arteries with hot irons, or by putting the limb into boiling oils, pitch, &c. which is still practised by the natives of India, the operation generally proved fatal, and, of course, was very seldom resorted to. It was not till towards the middle of the sixteenth century, that cauterizing instruments were discontinued, and the general use of a needle and ligature introduced by Ambrose Pere, a celebrated French surgeon, which method had been previously practised by the Greeks and Ara-

biens, in cases of excision or accidental wounds, though neglected in amputation.

AMULETS have been used by all nations as a charm or preservative against mischief or disease. The Persians adopted, from the Egyptians, the custom of suspending to the neck small cylinders, adorned with figures and hieroglyphics. The Jews were extremely superstitious in the use of them. The Greeks called them phylacteries. Among the early christians, amulets were made of the wood of the cross, or ribbons, with a text of scripture written on them. The agnus Dei's of the Pope, are the amulets still worn by the catholics. In the sixteenth century, we have amulets worn round the neck, against pestilence, made of arsenic, and warehoused in large quantities. An item, noticed in Gages Hengrave, says, "a hundryth wight of Amlets for neke, xxxs. iiijd." Though amulets are now fallen much from the repute in which they were anciently held, yet, notwithstanding the progress of learning and refinement, there is not any country in Europe, even at this day, where the lower order of the people do not believe in some charm or other.

ANABAPTISTS, a denomination of christians, who maintain that baptism ought always to be performed by immersion, and not administered to children before the age of discretion. Storck, Stubner, and Munzer, were the first disciples of Luther, who, about the year, 1521, stiled themselves Anabaptists. This sect was brought into great disrepute by the fanaticism and cruelty of some of its followers, who attempted to level all distinctions in society, and to make property common : having obtained possession of Munster, they called it Mount Sion, and, though guilty of the most extravagant excesses and cruelties, they affected to establish a kingdom of saints. Some of these infatuated people found their way into this country in 1549, and were burnt as heretics. So late as 1661, a body

of them under their leader Veneris, was defeated by General Monk, and all the prisoners tried and executed. However, in 1680, we find the Anabaptists had established a place of worship in London, having relinquished their wild ideas of general liberty, and they are now reputed an inoffensive and respectable sect.

ANAGRAM, the formation of a new word, or sentence, by the transposition of the letters of a name, was not unknown to the Greeks, who ascribed the invention of it to Lycophron, about 280 B.C. This bagatelle was revived by Daurat, a French poet, in the Reign of Charles IX. The finest and happiest of all Anagrams extant, is that on the question put by Pilate to our Saviour, *Quid est veritas* ? which, anagrammatically, makes *Est ver qui adest*.

ANATOMY. The Egyptians, at a very early period, must have acquired some knowledge of Anatomy, not only from the circumstance of their embalming the bodies of their dead, but from the custom of carrying about at their feasts, a skeleton, lest their guests, in the midst of their merriment, should forget the frail tenure of life and its enjoyments. Anatomy was also studied by the ancient Greeks, and is frequently alluded to in Homer : it is even asserted, that they used to dissect the bodies of criminals alive, and that Herophilus, a Greek physician of Chalcedon, and attached to the medical school established at Alexandria about 200 years B. C., was guilty of this barbarity. The first dissection, however, on record, is one in which Democritus of Abdera, was engaged, in order to ascertain the sources and course of the bile. Galen, who flourished about 150 after the birth of Christ, and received his education at Alexandria, is the only one among the Romans whose writings on the subject are worthy of notice. Soon afterwards the science of Anatomy gradually diminished, and might be considered as extinguished in Europe, for the

dissection of dead bodies was regarded by the early christians as a sacrilege ; and the emperor, Charles V., ordered a consultation of the theologians of Salamanca, to determine whether, in point of conscience, a body might be dissected, in order to obtain a knowledge of its structure. It is said, that the earliest law enacted in any country for the promotion of Anatomical knowledge, was passed in Great Britain in 1540, and permitted the united company of barbers and surgeons to have yearly the bodies of four criminals to dissect.

The Anatomy of plants is a modern science, and was first brought into repute by the works of Grew and Malpighi, published about the year 1670.

ANCHOR. According to Pliny, the anchor was invented by the Tuscans, though Pausanias gives the honor to Midas, the son of Gordius, who founded the city of Ancyra. The most ancient anchors were of stone, or any thing heavy, which being let down into the sea, might stay the course of the vessel ; afterwards they were made of iron, and furnished with teeth or flukes—hence, *odentes*, teeth, are used by the Greek and Latin poets for anchors : at first, they had only a tooth, or fluke, on one side, the other, Pliny states, was added by Eupalamus ; but Strabo says, by Anacharsis, about 550 B. C., who is, therefore, reputed the inventor of anchors. These anchors resembled the modern, with the exception of the wooden beam :—the largest anchor belonging to a first-rate man-of-war weighs about 90 cwt. Sir Samuel Morland (who died in 1696), invented the drum capstan, for weighing the anchor. Beckman says, the ancients attached buoys to their anchors.

ANCHOVY. Pliny mentions this sauce as having been used by Apicius.

ANDROIDES. Automata, representing human figures,

were not unknown to the Greeks. Aristotle alludes to them under the name of *nauras posta*. Homer relates that tripods had been constructed by Vulcan, which being furnished with wheels, advanced forwards to be used, and again, of their own accord, returned to their places. The Romans had *Androides* at their shews, some of which appear to have been put into motion by quicksilver, as is still practised by the Chinese. The art of constructing *Autometa* with springs and weights, had its origin about the same period that clocks were invented. Albertus Magnus, the great mathematician, who died in 1220, is reported to have made an automaton, which not only moved, but even spoke, and which being shewn to Thomas Aquinas, for a moment so surprised and confounded him, that he broke it, "and thus," exclaimed Albertus, "was the labour of 30 years destroyed." Archytus, of Tarentum, made a wooden pigeon capable of taking a short flight; and John Muller, otherwise Regiomontanus, an eagle, on a similar construction, which flew to meet the emperor, Maximilian, on his arrival at Nuremberg, in 1470, and perched upon the town-gate. In 1769, Mr. Kempelin, of Presburg, constructed his celebrated Automaton chess player, which was first exhibited in London, in 1783.

ANECDOTE. This word was originally given by the Greeks, to every thing, of whatever nature, that was made known to the people for the first time. In its literary acceptation, it signifies historical details of such events which have taken place in the courts of sovereigns, and which it never was intended to be published. Procopius first made use of this title to an infamous libel on the emperor Justinian, and his wife Theodora.

ANEMOSCOPE, an instrument for shewing the direction of the wind, constructed in the interior of an apartment, and connected with the weathercock, or vane, at the top of the

house. This machine is noticed by Vitruvius, and was introduced in the mansions built in the time of William III.

ANIMAL MAGNETISM. The use of the Magnet in medicine was first recommended by Father Hehl, a German, in 1774: M. Mesmer, a physician of the same country, and his pupil Deslau, by adopting the suggestion of Hehl, became the direct founders of a system, which for a considerable time, in consequence of the cures it was said to have performed, excited the attention of the medical professors of Europe. Its extensive practice at Paris induced the King, in 1784, to appoint a committee to investigate the matter, and which committee submitted to be magnetised. This agent, which Mesmer pretended to have discovered, he affirmed was a "fluid universally diffused and filling all space, being the medium of a reciprocal influence between the celestial bodies, the earth, and living beings; it insinuated itself into the substance of the nerves, upon which, therefore, it had a direct operation; it was capable of being communicated from one body to other bodies, both animate and inanimate, and that at a considerable distance, without the assistance of any intermediate substance; and it exhibited in the human body some properties analogous to those of the loadstone, especially its two poles. Thus Animal Magnetism was," he added, "capable of curing all nervous disorders, and exciting and directing the salutary crisis of diseases." The committee, however, soon came to the determination that most of the cures were pretended and fictitious, and that if any relief had been afforded to the patient, by the different postures in which he was placed, and the tricks and mummery of the Doctor, it must be entirely attributed to the effect of imagination.

In the year 1798, Perkins, an American, introduced into this country a similar fictitious method of curing diseases by means of, what he called, *metallic tractors*, and by which, he, in the course of six years, collected upwards of £19,000, the contributions of British credulity.

ANNALS. Cicero accounts for the origin of Annals, as follows: the Pontifex Maximus, that he might preserve the memory of transactions, directed that the occurrences of each year should be fairly written, and placed in some public part of his house, where every one was at liberty to read it. This they called *Annales Maximi*, and the custom was kept up till the year of Rome 620; when these *Annales Maximi* consisted of 80 books, most of which were destroyed in the burning of the city by the Gauls.

ANNATES, or First Fruits, being the year's income on church livings, due on the death of the incumbent, and paid by his successor to the Pope, are ascribed as having been first enforced by Anthony, Bishop of Ephesus, in the fourth century, and were formerly estimated, in this country, according to a rate or valor made, under the direction of Pope Innocent IV., by Walter, Bishop of Norwich, in the 38th of Hen. III., and afterwards advanced in value by commission from Pope Nicholas III., in 1292, which valuation is still preserved in the Exchequer; and to this was subsequently added the tenths or decimæ, being the tenth part of the annual profits of each living, by the same valuation, claimed by the Holy See, on the authority of the precept recorded in Numb. xviii. v. 26. The papal usurpations being thus introduced into this country by Pandulph, the Pope's legate, during the reigns of John and Hen. III., were made perpetual by Alexander IV. and his successors; and, though often opposed by the British Parliament, continued with various intermissions till the Reformation, under Hen. VIII., at which period it was computed, that in the compass of fifty years 800,000 ducats had been sent to Rome, for first fruits only. Henry VIII., at the Reformation, annexed this revenue to the crown, and on the accession of Elizabeth to the throne, a new valor beneficiorum was made, by which the clergy are at present rated. In 1704, Queen Anne restored the Annates to the church, and invested them in trustees for ever, for the purpose of appropriating them to

the augmentation of those livings which were under fifty pounds a year, and considered inadequate to the support of a priest.

The following number were certified to be capable of augmentation, viz :

1071 Livings that did not exceed £10 per ann.

1461 Livings above £10 and not exceeding £20 per ann.

1126 Livings above £20 and not exceeding £30 per ann.

1049 Livings above £30 and not exceeding £40 per ann.

and

884 Livings above £40 and not exceeding £50 per ann.

5591

By a return made to the House of Commons in 1818, it appears there were then

12 Livings not exceeding £10 per ann.

45 Livings above £10 and not exceeding £20 per ann.

119 Livings above £20 and not exceeding £30 per ann.

246 Livings above £30 and not exceeding £40 per ann.

and

314 Livings above £40 and not exceeding £50 per ann.

736

Making, in the course of one hundred and fourteen years, a reduction in the number of poor livings of 4855.

By the same return it appears that the number of livings between £50 and £60 a year, was 314; between £60 and £70, 301; between £70 and £80, 278; between £80 and £90, 251; between £90 and £100, 394; making a total of 2274 livings, not exceeding £100 a year; that the number of livings between £100 and £110 per ann. was 250; between £110 and £120, 239; between £120 and £130, 254; between £130 and £140, 217; and between £140 and £150, 219; making the number of livings not exceeding £150 a year amount to 3503; and that there were 5595 of

greater value than £150 a year; to this number were to be added 38 sinecures, 26 appropriators, and one impropiator, and 858 livings which had not been returned by the Trustees of Queen Anne's bounty, making the total number of Church Livings in England and Wales, to amount to 10,021.

The total amount of the Church Revenue has been estimated at about three millions, and the sum of about £40,000 is said to be applied to the purposes of the Queen's bounty.

ANNIVERSARY days, among our ancestors, more particularly denoted those days on which the martyrdoms of the saints were yearly celebrated in the church, the origin of which is referred by some writers to Pope Anacletus, and by others to Felix I.

ANointing. The ceremony of anointing Kings at their accession to the throne, was practised by the Jews, and soon after the introduction of Christianity adopted in Europe. It is stated to have been first performed at the coronation of Pepin, King of France, in 750, and in this country of Edmund, King of the East Angles, in 857, or according to others, of Alfred in 872.

ANTHEMS. St. Ignatius is stated to have introduced this mode of singing into the church service among the Greeks, and St. Ambrose among the Latins, about the close of the fourth century. Anthems were introduced into the reformed service of the English church, in the reign of Elizabeth.

ANTIMONY. The ancients, it is supposed, were not acquainted with Antimony as a distinct metal, though they were with the Oxyde of Antimony, which was chiefly used by the women to add lustre to their eyes, as is still customary in India; thus Jezebel, understanding that Jehu was to enter

Samaria, painted her eyes with antimony. The Greeks called it Stimoni. The reason of its modern denomination is referred to Basil Valentine, a German monk, who, as the tradition relates, having thrown some of it to the hogs, observed that after purging them violently they immediately grew fat upon it; this made him think, that by giving his fellow monks a like dose, it would be attended with equal beneficial consequences: the experiment however proved so unfortunate that they all died, and the medicine was thenceforward called Antimony, q. d. Anti-monk.

APOLOGY. This word, as derived from the Greek, signifies a defence, or refutation, and has been chiefly made use of as a title to those works written in vindication of the Scriptures. The works of Quadratus in 124, and of Justin Martyr, in 150, were thus styled; and it was also adopted by Dr. Watson, bishop of Llandaff, in his refutation of the bible from the infidel attacks of Paine. However classical this title may be, it is certainly not an appropriate one in our language for such an occasion.

APOTHECARY. This word is derived from the Greek, Apotheke, a shop—Apothecaries being originally employed in collecting herbs and drugs, under the direction of the physicians. Cicero mentions a medical shop, well furnished, and Fulgentius one, which had many aromatic herbs, and surgical instruments, well polished. It is thought that the African physicians first gave up the preparation of medicines—a custom which travelled through Spain, to the lower parts of Italy, and we find Apothecaries noticed as distinct from physicians, in an edict published by the emperor Frederick II., in 1220, in which it is directed that the shops of the Apothecaries should be established at the public expence, and placed under the direction of the magistrates. Edward III., in 1345, gave a pension of sixpence a-day to Counsus de Gangelard, as his

Apothecary, for attending him during his illness in Scotland, and this is the first mention we have of Apothecaries in the English history. They were made into a corporate body by James I. in 1617, previous to which they formed part of the Grocers' company.

APPLE-TREES were brought by Papirius, from Syria and Africa, into Italy, in the time of Augustus, about the year 9 B. C.

APRICOTS, it is said, came from Epirus, and were first planted in England in the reign of Elizabeth : but accounts vary : Whitaker says they were introduced by the Romans.

AQUÆDUCTS. For a period of 440 years, the Romans contented themselves with the waters of the Tiber, and the wells and fountains in the city and its neighbourhood ; but when the number of houses and inhabitants was considerably augmented, they were obliged to bring water from remote places by means of Aquæducts : this was effected by Appius Claudius, censor of Rome, in the 442d year of that city. Some of these Aquæducts were paved, and others conveyed the water through a natural channel of clay : water was also frequently conducted by pipes of lead into reservoirs of the same metal, or into troughs of hewn stone. Frontinus, a man of consular dignity, and who had the direction of the Aquæducts, under the emperor Nerva, mentions nine Aquæducts which emptied themselves through 13,594 pipes, of an inch diameter,

AQUA FORTIS. This preparation was known in the twelfth century : it was first made use of for the purpose of assaying, by Mons. le Conte, in 1530.

AQUA TINTA, a mode of engraving, resembling drawing,

in India ink, invented by Le Prince, a French artist, about the middle of the last century, who kept his process for a long time secret, and sold his prints at first as drawings; he appears, however, to have been acquainted only with the powder grain, and the common method of stopping out. The prints which he produced, are still some of the finest specimens of the art. Paul Sandby was the first who practised this method of engraving in England.

ARÆOMETER, an instrument for ascertaining the density and gravity of fluids, the invention of which is by some attributed to Archimedes, and by others to Hypatia, the daughter of Theo, about the end of the fourth century.

ARCH, in architecture. The origin of arches is so obscure, and our lights so few, that it is perhaps impossible, at this time, to determine to whom the invention is due. The Egyptians, skilful as they were in architecture, seem unacquainted with Arches, their temples being roofed with slabs, laid horizontally from column to column, and the openings covered with massy lintels. The Chinese were acquainted with the use of Arches at an early period, and an account of some of them is given by Barrow. However, the most ancient Arches, of whose erection we have dates, are those in the cloacæ of Rome, which were begun by Tarquinius Priscus: there are also Arches in several Greek theatres; among others, the theatre of Bacchus, at Athens, erected probably 400 years before the christian æra. Yet the method of constructing Arches geometrically, Mr. Watkins asserts, was unknown till the date of the Macedonian conquest, about 290 B. C. The pointed Arch appears in churches so early as the reign of Edgar: the lancet Arch is the oldest form of Arch known in the East, and this form of Arch was introduced by Bishop de Lacy, in the cathedral of Winchester, about the commencement of the thirteenth century. The church of St. Mary, in

Cheapside, built in the reign of William the Conqueror, is said to have been the first church built with Arches of stone, and for that reason was named St. Mary de Arcubus, that is, St. Mary le Bow, and for the same reason, the first arched stone bridge erected at Stratford, near London, by Matilda, wife of Hen. I., gave the name to that village of Stratford le Bow. The foundation of St. Paul's, built in 1187, was secured by Arches.

The first triumphal Arch is supposed to have been erected in honour of Romulus. Under the emperors, they were constructed of the finest marble, and were very rich and magnificent, so that Pliny calls them a new invention. They were unknown in ancient Greece.

ARCHBISHOP. The origin of this title is involved in considerable obscurity. According to Dugdale, it had its rise in Alexandria, and St. Epiphanius styles Peter, the sixteenth in succession after St. Mark, Archbishop of Alexandria; others suppose that this rank was not known in the east till about the year 320, when Athanasius assumed the title of Archbishop.

It is equally uncertain when the title was first known in England, for it appears that long before the arrival of St. Augustin, Wales had an Archbishop of her own, who seems to have been elected by the bishops, and that the bishop of St. David's was styled Archbishop of Wales, from the year 550 to the year 1100, when he submitted to the Archbishop of Canterbury, as his metropolitan. It is, indeed, doubtful, whether St. Augustin, commonly called St. Austin, who was sent by Gregory I. in 597, to convert the Anglo-Saxons, ever made use of the title of Archbishop, that of metropolitan being considered by the Roman church of equal, if not superior authority. The Archbishop of Canterbury, till the year 1152, had jurisdiction over Ireland: he was also considered as *legatus natus*, and consequently possessed all the privileges of the Pope's ambassador; he even enjoyed some spe-

cial marks of royalty, as to coin money, &c., and to be the patron of a bishopric, which he was, of Rochester. His usual titles, till the period of the Reformation, besides that of Archbishop and metropolitan, were patriarch, pope, and chief priest of Britain. Henry VIII., in 1534, directed that from thenceforward he should be styled primate and metropolitan of *all* England, and the Archbishop of York, primate of England.

Saint Adeodatus, or Deus dedit, the sixth in succession to Austin, was the first Englishman who had the honour of being appointed Archbishop of Canterbury. St. Lanfranc, the twenty-third Archbishop, removed the bishops' sees from small towns to cities. Thomas a Becket, the thirty-eighth Archbishop was murdered at the altar of his Cathedral on the 29th of December, 1170, and canonized by Alexander III., in 1172. In 1221, his bones were taken up in the presence of Hen. III., by Archbishop Langton, and enshrined with gold and set with jewels. Hen. VIII., in 1535, stripped this shrine of its riches, and directed the bones to be burned. Simon Sudbury, the fifty-seventh Archbishop, and also Chancellor, was beheaded by the rebels under the command of Watt the Tyler, in 1381. Thomas Cranmer, the sixty-seventh Archbishop, was burnt for heresy at Oxford, on the 21st of March, 1556. In the year 1621, George Abbot, the seventy-third Archbishop, while hunting in the park of Lord Zouch, at Bremzill, accidentally killed his Lordship's gamekeeper, by an arrow from a cross-bow aimed at one of the deer; a commission of ten persons was appointed to enquire into this matter, and the result was that a pardon and dispensation passed the Great Seal, and the Archbishop was declared capable of all metropolitical authority, as if this accident had never occurred. William Laud, the seventy-fourth Archbishop, was beheaded under a charge of high treason, on the 10th of January, 1645. William Sancroft, the seventy-seventh Archbishop, was deprived of his See in 1691, for

refusing to take the oaths of allegiance to William and Mary.

The first Archbishop of York was Paulinus, who also received his appointment from Gregory in 633; he had jurisdiction over Scotland till 1472, when Pope Sixtus IV. created the bishop of St. Andrews, archbishop and metropolitan of that kingdom. During the wars between the Houses of York and Lancaster, Scrope, Archbishop of York, was beheaded for treason, which is the first instance of an ecclesiastical officer of rank being capitally punished by the civil authorities.

There was formerly for a short time, a third Archbishopric in England. In 785, Pope Adrian I. created Higbert Archbishop of Litchfield, giving him for his suffragans the bishops of Mercia and East Anglia, but in the year 800 it again fell under the jurisdiction of Canterbury.

ARCHDEACON. This ecclesiastical officer is first noticed at the Council of Nice, when he officiated as assistant to the bishop, having charge of the ornaments and utensils of the church, and a superintendence over the deacons and other inferior officers in their several duties. In the course of time he became superior to the Archimandrite or Rural Dean, but had no jurisdiction over the priests till the sixth century.

ARCHERY. The most ancient and universal weapon of offence is the bow, which is said to have been invented by Apollo, who instructed the primitive inhabitants of Crete in the use of it; some, however, chuse to give the honour of the invention to Perses, the son of Perseus, while others again ascribe it to Scythes, son of Jupiter and progenitor to the Scythians, who excelled in the science of Archery, and communicated it to the Greeks, from whom the Romans acquired their knowledge of the art, and introduced it into their army during the second Punic war. The bow was also

the principal weapon of those Northern hordes, who overran and finally subjugated Europe.

The ancient Britons at the period of Cæsar's invasion were chiefly armed with the lance and sword, the bow being brought into this country by the Anglo-Saxons and Danes, who were well acquainted with its use, though they principally employed it for the purposes of food or pastime, and we are perhaps indebted to the Norman conquest for its introduction as a military weapon, at least of the *Cross-bow*, for the *Long-bow* is scarcely noticed till the reign of Henry III., when we first meet with the term *sagittarius*, which most probably has particular relation to this instrument.

The *Cross-bow* was of two kinds, the larger called the ballista and sometimes the catapulta, and the smaller called the arbalest; the former was used for the throwing of stones of great weight, as also for discharging a number of long darts or javelins at one stroke; we read that Uzziah, who began his reign about 809 years before the Christian æra, "made in Jerusalem engines invented by cunning men to be upon the towers and upon the bulwarks, to shoot arrows and great stones withal." Livy in his description of the siege of Carthage, says there were three hundred and twenty great catapulta taken, and two hundred small ones, besides thirty-three great ballista and fifty-two small ones; the surprising effects of these machines are particularly recorded by Josephus at the siege of Jerusalem.

Camden, besides the catapults and ballistas, mentions the mangonels, trebuches and bricolus, as being used by our ancestors to cast forth mill-stones; and Holinshed relates that when Edward I. besieged Strively Castle, he caused certain engines of wood to be raised against it, which shot off stones of two and three hundred weight. Even some time after the introduction of gunpowder, and cannon had been brought into use, yet owing to the extreme awkwardness of the latter in their construction, and the frequent

accidents occasioned by their mismanagement, this ancient kind of artillery was not totally given up till the reign of Hen. VI.

The small cross-bow called the *arbalet* or *arbalest*, is said to have been invented by the Sicilians ; it was carried by the foot soldiers, and when used was charged with a quarrel or bar-bolt, that is, a small arrow with a flat head, one of which occasioned the death of Harold at the battle of Hastings, and of Richard I. at the siege of Chalez in Normandy, in 1199. In the reign of Hen. III. the long-bow seems, from its lightness and other advantages, to have acquired in England a superiority over the cross-bow, which in the course of a few years became confined to the defence of castles and other fortified places : we nevertheless find it noticed in 1627, as employed on an expedition undertaken against the Isle of Rhee.

The *Long-bow*, generally called the *English bow*, was first applied to military purposes, about the middle of the thirteenth century, though not generally adopted till towards the close of Edward the Second's reign. Under Edward III. the glory of the English long-bow was at its zenith. The battle of Cressy, in 1346, was attended by a circumstance that seems to have a particular reference to the use of the long-bow among the English ; for it is related that previously to the battle, a shower of rain so slackened the strings of the Genoese cross-bows, that they became almost unserviceable ; while the English were still capable of annoying their enemies with success. Both this victory, and that of Poitiers, ten years afterwards, were chiefly attributed to the skill of the English Archers ; and during the reigns of Henry IV. and V. the victories of Homildon and Agincourt, proved they still maintained their reputation. Under Edward IV. an ordinance was made, that every Englishman should have a bow of his own height, to be made of yew, wych, hazel, ash, or auburne, or any other reasonable tree according to their

powers ; and Rymer states that he sent a thousand archers to the assistance of the Duke of Burgundy, each archer receiving sixpence a day, a considerable sum at that time. Archery was also greatly encouraged during the subsequent reigns, and many amusements likely to interfere with the practice of it, strictly prohibited. In 1541 the Parliament under Hen. VIII. complain of the disuse of the long-bow, " heretofore the safe-guard and defence of the kingdom, and the dread and terror of its enemies." Even so late as the commencement of the reign of Charles I., which was some time after the introduction of fire-arms, the long-bow constituted the chief strength of the army ; it, however, yielded, during the civil wars, to the superiority of musketry, and soon afterwards, from being the glory of British warriors, dwindled into a mere recreation and amusement.

The *bows* were chiefly imported from Venice : the price of them in 1482, being from forty shillings to eight pounds a hundred : they were made of Spanish or English yew ; sometimes of withem or elm : the bow-string was of hemp or silk. The range of a bow (the arrow being drawn to the ear), was from six to eighteen, and twenty score yards, and at a moderate distance the arrow would pierce through a well seasoned inch board.

The *arrows* were made of ash or asp, and of the length of a cloth yard. Henry V. directed six wing feathers to be plucked from every goose, for the purpose of improving his arrows. Whistling arrows are noticed in the reign of Henry VIII., and arrows with wild fire attached to them, are mentioned among the stores at Newhaven and Berwick, in the reign of Edward VI.

ARCHITECTURE. Nature and necessity early taught mankind a method of preparing for themselves, huts, tents, and cottages, from which they gradually advanced to more regular and stately habitations. The tower of Babel com-

menced upon, about 2247 B. C. is the earliest building recorded, and from its being constructed of brick proves the great antiquity of the art. The Cyclops, who founded the cities of Teryns and Mycene, are represented as being the earliest people who brought architecture to any degree of excellence, and Solomon had recourse to the Tyrians, to assist him in the building of his temple: in general, however, architecture is considered of Grecian origin, three of the regular orders, or manners of building, viz., the Corinthian, Ionic, and Doric, being denominated from them, and there is scarcely a single member of moulding but has a Greek appellation: the art was in its greatest glory under Pericles.

The Romans, though they gave but little encouragement to the fine arts, seem under the Tarquins, who were of Tuscan origin, to have bestowed considerable attention to architecture in their public edifices, which was afterwards improved by their connection with Greece, so that long before the period when Vitruvius composed his treatise, the Romans could boast of many good architects, among whom was Cossutius, who was engaged by King Antiochus, about 200 years before the Christian æra, in the temple of Jupiter Olympus, which Pisistratus had begun. Sylla, on his return from the Mithridatic war, introduced an expensive and luxurious style of decoration in architecture. Julius Cæsar incrusted his whole house with marble. The private houses were also built of the most costly materials, and of great extent. An author, of the age of Tiberius, says, "The man thinks himself confined in his habitation now whose house is not as large as the farm of Cincinnatus," which was about four acres.

Previous to the arrival of the Romans, who introduced the science of architecture into this country, the houses of the natives were built of wood and mud, in a cylindrical form, with an arched door, and a dome, with an opening on the top. In the winter they chiefly resided in caves. Some knowledge of the Cyclopean state of architecture, which consisted merely

of large pieces of stone, piled upon one another, without cement, is, however, observable at Stone-henge, which is said to have been erected about 500 B. C., and to have been the temple of the Sun, noticed by Diodorus.

ARGOL, or Archil. The dye extracted from this moss, found in many parts of the Archilepago and in the Canary islands, is supposed to have been known to Theophrastus, and to be the Phycosthalassion of Dioscorides. Pliny informs us, that, with this substance, the dyers gave the ground, or first tint to those cloths which they intended to dye with the costly purple, and that the colour, when fresh, was equal to the Tyrian. Its virtues, in modern times, were accidentally discovered by Rucelli, a Florentine, who, in the commencement of the fourteenth century, traded to the Levant, and, returning with great wealth to Florence, introduced the process of dying with argol, which he first manufactured into a paste: the method of preparing it, was, however, a secret, for a considerable number of years, till at length it was divulged by Rosetti, a dyer, at Florence. The Dutch procure their argol from the Canaries, which they manufacture into a substance called lacmus, or litmus.

ARITHMETIC. There can be no doubt but the knowledge of the difference between greater and smaller numbers must be coeval with the human race. The first men must have counted their cattle, their days, their trees, &c., and it is plain that the formation of society, and the possession of property, suppose the necessity of calculation: it is possible, however, that mankind may have subsisted for a considerable time without bringing the science of arithmetic to any perfection, or computing by any regular scale, as 10, 20, 30, &c.: yet, that this was very early introduced into the world, even before the flood, may be gathered from the expression in Enoch's prophecy, as quoted by the apostle, Jude—"Behold,

the Lord cometh with ten thousands of his saints :'' the direction also given to Noah, concerning the dimensions of the ark, leaves no room to doubt that he had a knowledge of numbers and measures.

It is asserted by some that arithmetic was invented by the Phœnicians, and carried into Egypt by Abraham, from whence the science was transmitted to the Greeks by Pythagoras, who first made use of the letters of the alphabet to represent numbers, and which method was also adopted, both by the Hebrews and Romans, though each made use of their own letters for that purpose.

All the nations of whom we have any knowledge (except the ancient Chinese) have chosen the same mode of numeration, namely, the decuple progression : the different periods of tens were distinguished, either by accents, which affected the numeral letters, as among the Greeks, or by different combinations of the numeral letters, as among the Romans, which method, when the numbers were considerable, was very complicated and inconvenient.

The ingenious system of numeration, which forms the basis of our modern arithmetic, was long familiar to the Arabians, before it penetrated into our quarter of the world : but the honor of the original invention, according to Alsiphadi, an Arabian author, belongs to the Indians. The Arabians, or Saracens, as they were then styled, introduced the art and Indian character into Europe, on their conquest of Spain, and it became generally known among the learned, about the commencement of the eleventh century.

Ptolemy, in the second century, invented the *sexagesimal numeration* and notation, still used in astronomical calculations, and for the subdivisions of the degrees of circles.

The next considerable improvement was that of *decimal parts*, invented by John Muller, of Koningsberg, commonly called Regiomontanus, about the middle of the fifteenth century ; though the first person who professedly treated on this

subject, and introduced the name of *desmé*, was Simon Sternius, a German, in 1585.

The discovery of *logarithms* by the celebrated Napier, at the close of the sixteenth century, has probably carried arithmetic to the utmost perfection of which it is capable; for, by this, multiplication is changed into addition, division into subtraction, the formation of powers into multiplication, and the extraction of roots into division.

Arithmetic was introduced into Britain by the Romans, and a treatise is said to have been written on the subject by Aldhelm, Bishop of Sherborne, in the seventh century, and that Hugh, the Lincoln saint, gave lectures on the science, at Oxford: but the modern practice of arithmetic was not known in England till towards the middle of the sixteenth century. (*See Abacus and Characters Numeral*).

ARMOUR. The expediency of protecting the person against hostile weapons by some kind of defensive armour, was no doubt discovered soon after the introduction of the weapons themselves. The sacred writings acquaint us with the earliest memorials of the ancient military habit, though little more than the names of the different parts of it occur. The defensive armour of the Israelites consisted principally of the shield, the open helmet, and the breast-plate, and greaves are noticed as being used by Goliath, the giant, of Gath. The armour of the Egyptians, Persians, Greeks, and Romans, very much resembled that worn by the Hebrews. The material anciently used for the making of armour, was leather, or the skins of wild beasts; but, as civilization advanced, brass, iron, and other metals were preferred, and, in the time of Asiatic magnificence, even gold was not spared.

Vegetius observes, that the Roman infantry was invariably covered with defensive armour, from the foundation of the city to the reign of the Emperor Gratian, when the relaxation of discipline, and the disuse of exercise, rendered it too

heavy for them to carry, and they successively obtained permission to lay aside both their cuirasses and helmets, and thus, by their pusillanimous indolence, became an easy prey to the missile weapons of the barbarians, and occasioned the destruction of the Roman empire.

The early Britons are described as opposing the legions of Cæsar with merely a light shield, and endeavouring to render themselves formidable by tracing wild and horrid images on their naked body, and the drawings of the eighth century represent the Anglo-Saxon soldier as still protected solely by his shield, though, towards the close of that century, the lorica, or coat of mail, which consisted of plates of metal interwoven with each other, was worn by people of rank. Greaves, or leg guards, were introduced by the Danes in the tenth century. The Normans, at the period of the conquest, wore the hauberk, or shirt of mail, and the helmet, to which, by the commencement of the twelfth century, they added various other pieces of armour, so as to be completely protected from head to foot, or armed cap-a-piè. Claude Fauchet, a French writer of great respectability, describes an ancient knight arming himself in the following manner: "having first put on the shirt and breeches, or drawers of cloth, as also stockings of cloth, he then drew on the chausses, or breeches of mail, which covered the feet and the legs, and part of the thighs; next, a goubaison, or gambeson, generally made of cloth, but sometimes also of leather, doubled, stuffed with wool, and quilted together, and descending to the middle of the thighs; to this succeeded the gorget, or throat piece, composed of iron or steel, and adjusted to the neck; and over the gorget and gambeson was placed the hauberk, or shirt of mail, having sleeves made to fit the arm, and so far lengthened, as to secure the hand completely; this hauberk descended to the knees, and the breeches of mail were attached to it; so also was a capuchon, or hood of mail, which covered the head, and might occasionally be thrown back upon

the shoulders ; the hauberk was girt with a large belt or girdle of leather, called in English *bauldricke*, from which the sword depended ; and besides this sword, the knight usually wore a small knife or rather dagger, called *mercy*, because when a combatant was cast to the ground, and saw the knife in the hands of his opponent, he begged for mercy, if he desired to be respited from death. Instead of the *chapeau*, various kinds of helmets were introduced, according to the fancy of the wearer, with different modes for defending the face by iron bars, or plates of iron, let down at pleasure, leaving only a small opening for the eyes : the gloves of mail appertaining to the ancient warriors were attached to the sleeves of the hauberk : the *cointise*, a species of surcoat or mantle, was generally worn over the armour : it was made of silk, and charged with armorial bearings. This appellation was also given to certain ornamental streamers or pennons, attached to the lances. When Geoffrey, Duke of Normandy, was knighted, he was invested with an *incomparable* coat of mail, wrought with double chains, or links of iron, so closely interwoven that it was impenetrable to the point of the spear or the arrows : the *chausses*, or boots of mail, made also with double chain work, were then given to him, and a pair of gilt spurs put on his feet ; this done, a shield was hung upon his neck ornamented with lions of gold, and a helmet richly decorated with precious stones, and so well tempered that no sword could make any impression upon it, set upon his head : a lance was then brought to him made of oak, and surmounted with a head of iron of Poicton ; and lastly, a sword from the royal treasury.

Plated armour came into use about the year 1330, and continued till the time of Charles II., when it had dwindled down to the breast-plate and helmet. The gallantry of going to the battle naked, without any defensive armour, prevailed among the French during the reign of Louis XIV. to such an extent, that he was obliged to be continually issuing orders to restrain it.

The investing of *horses* with defensive armour is very ancient. The cavalry of Cyrus, according to Xenophon, were armed with forehead pieces, breast-plates, and side pieces; and Plutarch informs us that when the Parthians opposed the younger Crassus, they were not only clothed with defensive armour themselves, but that their horses were completely armed in brass and steel. This practice was introduced into England by the Normans, and continued to the close of the sixteenth century, when the horse-armour consisted of a char-fron or kind of mask, which enclosed the face and ears, with sometimes a spike issuing from the centre of the forehead, a criniere to guard the mane, a poitrinal or breast-plate, and a croupiere or hind-piece, which usually descended to the hocks. After this time the *barde* or horse armour appears to have been neglected, except that in the thirteenth and fourteenth years of Charles II. the horses of the militia were ordered to be provided with a pectoral and crupper.

ARMS, Coats of, or Armorial Bearings (*see Heraldry*).

ARMS, Offensive. Revenge early produced hostile weapons, and the club seems to have been the first resorted to; the spear and the dart are also obvious inventions—not so the bow and arrow. Hesiod tells us that in the early ages the arms and instruments of the primitive heroes were composed entirely of brass, (or rather copper); for iron being seldom found in mines like other metals, but extracted with considerable difficulty from the ore, was a late discovery.

Cæsar informs us that the ancient Britons had a dart or javelin, which they threw from their war chariots to annoy the enemy, and that the infantry made use of a short spear, having a ball at the nether end filled with brass, which they shook to intimidate the enemy, and a thong fixed to the upper end, that when employed as a missile weapon it might be recovered, and again used in close encounter: they had also

long and broad swords, without points, flung by a chain over the left shoulder, and occasionally a short dirk fixed in their girdles. The Anglo-Saxons, besides swords, were armed with spears, axes, and clubs. The Danes were principally attached to the battle-axe, which they brought into more general use. The Normans introduced the *arcubalisterii*, or shooters with the cross-bow, and *catapultæ*: the long-bow is first noticed in the reign of Henry III. If the metrical life of Robert Bruce may be believed, Edward III. had cannon in his first campaign against the Scots in 1327. Fire-arms of a portable construction were not invented till the beginning of the sixteenth century: a concise account of their introduction will be found under their respective titles.

ARMY. Menistheus, who succeeded Theseus in the kingdom of Athens, and led fifty ships to the siege of Troy, is stated to be the first person who marshalled an army in battle array.

The first pitched battle, the particulars of which are minutely recorded, is that described by Xenophon as having been fought between Croesus and Cyrus.

In the republics of ancient Greece and Rome, the profession of a soldier was not of that distinct character as to separate him from the ordinary occupations of a citizen; one of the first standing armies of which we have any distinct account, is that of Philip of Macedon, and with which, after repeated and violent conflicts, he vanquished the gallant and well exercised militias of the principal republics of ancient Greece. The frequent wars the Romans had with the Carthaginians, necessarily led to the introduction of a permanent military force, which commenced about the close of the second Carthaginian war, and continued till the destruction of the Roman Empire.

Charles VII., about the middle of the fifteenth century, appears to have been the first who attempted to establish a regular army in imitation of the Roman legions, and by this

measure, which gave a deep wound to aristocratical power, an important revolution took place in the affairs and policy of Europe.

By the Saxon laws every land-holder was obliged to keep armour and weapons suitable to his rank and possessions, and in case of foreign invasion every freeman was bound to join the army, it being one of the three services comprehended under the title of the *Trinoda Necessitas*. The introduction of the feudal system in 1086, occasioned a division of the lands of the realm into certain portions called knight's-fees, each of which was held upon the condition of serving the King in his wars, either at home or abroad for forty days, with horse and arms, which was to be performed by the tenant at his own expense, either personally or by unexceptionable substitute.

Many trace the first standing military force in Britain to the year 1200, when Sir Hubert de Bugo, who was Governor of Dover Castle, considering that it was not for the safety of the fortress to have new guards every month, procured an order that all who held of the Castle might, instead of performing a month's duty themselves, pay a fine of ten shillings, which was appropriated to the formation of a regular body of soldiers for the defence of the Castle. Our Kings indeed, at a very early period had a personal guard of honour for their immediate protection, and the support of their dignity; but there seems to have been no permanent body of troops, whose services could be considered as available upon any emergency, till the reign of Charles II., who in 1660 formed two regiments of guards, one of horse and the other of foot; the former was called the Oxford Blues, or the Royal Regiment of Horse Guards, and the latter the Coldstream Regiment of Guards, being raised by General Monk, in Scotland. Thus were established the two first corps of our present regular army, and which at the end of Charles's reign, including garrisons abroad, consisted of about 15,000 men.

ARROW. (*See Archery.*)

ARSENAL. The first public magazine of arms noticed in history is probably that established by David, who made a large collection of arms, and consecrated them to the Lord, in his Tabernacle; and which on the elevation of the young King Joash to the throne, were taken out of the Temple by order of Jehoida, the high priest, to arm the people and Levites. Solomon deposited a great quantity of good arms in his palace, called the forest of Lebanon, and had well provided arsenals in all his cities of Judah. The Romans also established them along the frontier of their empire.

ARSENIC. The ancients were acquainted with arsenic in its state of combination with sulphur; and Pliny records that the Emperor Claudius supposed, from its colour, it contained gold, and made several ineffectual attempts to extract this metal from it; it was, however, chiefly employed for the purposes of painting, and though Theophrastus was led by its weight to arrange it among metallic stones, it was not till the middle of the last century, that Monnet discovered it to be a distinct and peculiar metal. The first mention of white arsenic is in the works of Avicenna, who lived in the eleventh century.

ARTICHOKE: This vegetable was introduced into England, in the reign of Henry VIII.; it came originally from the Levant, and was first cultivated in Italy about the year 1474. The Romans used the calyx of the thistle kind, as we do the Artichoke.

ARTICLES OF RELIGION, as established by the Church of England, were framed by Archbishop Cranmer and Bishop Ridley, about the year 1552, and originally consisted of forty-two; these were first passed in the Convocation and con-

firmed by Royal Authority, in the year 1562. They were afterwards reduced to thirty-nine, and ratified anew in 1571.

ARUNDELIAN MARBLES, or *Parian Chronicle*, so called from being discovered in the island of Paros. This rare monument of ancient literature was brought from Greece by Mr. Petty, under the employment of the Earl of Arundel, in the year 1627; they contain a chronological detail of the principal events in Greece, from the commencement of the reign of Cecrops, 1582 B. C., to the close of the Archonate of Diognetus, 364 B. C., but in an imperfect state, the last ninety years being lost. During the civil wars and the subsequent usurpation of Cromwell, the marble was unfortunately broken into smaller fragments, and almost entirely defaced; the upper part containing nearly half the original tablet, is said to have been used in repairing a chimney-piece or hearth, in Arundel-house. The authenticity, however, of these marbles has been questioned in a learned dissertation on the subject, entitled, "The Parian Chronicle."

ASBESTOS. A native fossil stone, which the industry of mankind has found a method of manufacturing into cloth and paper. Pliny informs us that the ancients made use of this kind of cloth in the making of shrouds, for from its extraordinary property of remaining unconsumed in fire, it prevented the ashes of the hero from mixing with those of the wood whereof the funeral pile was composed. A pattern of the linen made from this stone, twelve inches long and six broad, and which had given two proofs of its resisting fire, was some years ago presented to the Royal Society.

ASPARAGUS. This plant was cultivated by the ancient Greeks and Romans.

ASS. This quadruped, Whitaker affirms, was brought

into Britain by the Romans, and made use of as a common beast of burthen, forming a chief part of the stock of Abbies. Assees' milk is noticed by the classical ancients, both as a cosmetic and a nutritive diet for invalids.

ASSASSIN. This word is said to be a corruption of Al Hassan, the name of a certain prince of the family of the Arsacidae, who insisted upon his subjects paying a blind obedience to his commands, and employed them in murdering the princes with whom he was at enmity. In the year 1192 they destroyed Conrade, Marquis of Montserrat, a zealous crusader, and in 1213, Lewis of Bavaria. The whole race of these assassins were put to the sword by Heligan Khan, a Persian Chieftain, in 1261.

ASSAY. In ancient statutes the trial of the purity of metals is called the touch, (probably the touch-stone being the only method then practised in assaying), and those who had the charge of the mint, keepers of the touch. The assay master of the Goldsmith's Company being to this day called the touch warden. A method of assaying by means of combustion, differing little from that now in use, was first introduced by the Bishop of Salisbury in the time of Hen. II.

ASSOCIATION. This term was first used by the Parliament and Gentry, to protect the person and government of Elizabeth, against the King of Spain and the Catholics; and all officers, civil and military, were enjoined to subscribe to it. A similar association was formed to protect William III. and the Government against all conspirators in 1696.

ASTROLABE. An Armillary Sphere, invented by Haparchus, about 162 B. C., and lodged in a secure place at Alexandria, where it served for divers astronomical purposes. Ptolemy found this instrument of great use in his celestial

observations taken about 150 B. C. ; but as several inconveniences were attached to it, he contrived to change the figure of the Astrolabe, and to reduce it to a plain surface, which he denominated a *Planisphere*, and which many centuries afterwards was applied by the Portuguese to the purposes of navigation.

ASTROLOGY. Judicial astrology is commonly said to have been invented in Chaldea, and thence transmitted to the Egyptians, Greeks, and Romans. Tiberius was extremely partial to the science, and while at Rhodes received lessons from Thrasyllus, by which he profited to such a degree, that he had the honour, in a credulous age, of having delivered predictions that were verified by the event ; and the Roman people in general were so infatuated with the art, that the astrologers, who were then called mathematicians, maintained their ground in spite of all the edicts of the emperor to expel them from the city ; and even so late as the close of the sixth century, the subject of one of St. Augustin's homilies was the reconciliation of one of these pretended mathematicians with the church.

The astrology adopted by the moderns was, however, derived from the Saracens : it was prevalent in England during the fifteenth century, and the predictions of astrologers were the common theme of conversation at the French court, even so late as the reigns of Henry III. and IV. of France.

ASTRONOMY. The early history of this science, like that of many other ancient discoveries, is too much disfigured by fabulous and allegorical representations to admit of any regular or satisfactory elucidation. The generality of writers fix the origin of astronomy and astrology in Chaldea, and accordingly, among the ancients we find the word Chaldean frequently used for astronomer. Some choose, however, to attribute the invention to the ancient Hebrews, and some even

to the first men, building on the authority of Josephus, and what he mentions about Seth's pillars, upon which it is said the science of astronomy was engraved. Parthyras informs us that astronomical observations were made at Babylon so early as 2234 B. C., a register of which for 1903 years was sent by Calisthenes to Aristotle, when that city was captured by Alexander the Great, 331 B. C. The Chinese carry their pretensions to the knowledge of astronomy to a still earlier period, dating it from a conjunction of five of the planets, which they say occurred 2500 B. C., and mentioning an eclipse of the sun in the constellation of Scorpio, 2150 years before Christ. Thales, the Milesian, who died 548 B. C., was the first who taught the globular figure of the earth, the obliquity of the ecliptic, and the causes of solar and lunar eclipses, which latter phenomena he is said to have been able to predict. Pythagoras about forty years before had given a general idea of the solar system, which he had acquired from the Egyptians, and brought into Greece and Italy: he was the first among the Europeans who taught that the earth and planets turn round the sun, which stands immovable in the centre; that the diurnal motion of the sun and fixed stars is not real, but apparent, arising from the earth's motion round its own axis, &c., which system about the year 300 B. C. was completely reversed by Ptolemy, who maintained that the earth was immovable, the celestial bodies performing their diurnal revolutions around it, and as this idea seemed afterwards to be confirmed by scriptural authority—"Sun, stand thou still upon Gibeon; and thou, moon, in the valley of Ajelon," it was for many ages considered heretical to dispute it. In 1530 Copernicus, canon of Frauenberg in Prussia, published his system of astronomy, completely establishing that of the Egyptians, as communicated by Pythagoras; but such was the ignorance and bigotry of the Romish church, that when Galileo in 1615 attempted to confirm this system, and to prove from the authority of the fathers and orthodox divines

that the language of scripture was not to be strictly followed in questions merely physical : he was cited before the court of inquisition, accused of heresy, and was for some time thrown into prison : upon a repetition of the offence in 1633 he was again cited before the inquisition, and after a trial of two months, received sentence in full congregation, and solemnly ordered on his knees to abjure and condemn the Copernican system, as contrary to the scriptures, and to bind himself by oath no longer to teach or support it : he was then condemned to perpetual imprisonment, from which, however, at the end of a year, he was enlarged by the solicitations of the Grand Duke.

Even so late as the commencement of the last century, when the Copernican theory had been long fully admitted by the most eminent astronomers of Europe, and almost demonstrated by the immortal Newton, the Romish church persevered in their opposition to this system, which is thus noticed by Le Seur and Jacquier in their observations on the *Principia*—"Newtonus in hoc tertio libro telluris motæ hypothesim assumit, Autoris propositiones aliter explicari non poterant, nisi eadem quoque facta hypothesi. Hinc alienam coacti sumus gerere personam, cæterum latis a summis pontificibus contra telluris motum decretis nos obsequi profitemur."

The earliest treatise on astronomy that has been conveyed to us was written by Ptolemy, and seems to have been miraculously reserved from the general destruction of Grecian philosophy by the Arabians, at the capture of Alexandria, A. D. 640. The Arabians entitled this work the *Almagest*, it having been translated into their tongue about the year 827, by order of the caliph, Almamon. A latin version of it was procured about the year 1230 by the emperor, Frederick II. : but the Greek text was not known in Europe till about the beginning of the fifteenth century, when it was brought from Constantinople, then taken by the Turks, by George, a monk of Trebizond, who translated it into latin, and this translation has been frequently published.

AUCTION. Public Auctions were not unfrequent among the ancient Romans, and as goods taken in war were sold in this way, they were performed by the public crier, "sub hasta," under a spear stuck up on that occasion, and under the superintendence of some magistrate, who authenticated the sale and delivered over the goods to the purchaser. Petronius gives the following notice of a sale by auction, "Julius Procullus will make an auction of his superfluous goods to pay his debts."

It is not known when the disposal of goods by auction was first practised in England; the earliest instance noticed is that of an auction of books in 1676, being the library of Dr. Seaman, to the catalogue of which was prefixed an address, stating that though the disposal of books by auction was not usual in England, it had been practised in other countries, to the advantage of both buyers and sellers. The property of Governor Yule on his return from India in 1700, was disposed of by public sale.

AUGMENTATION of Church Livings. (*See Annates.*)

AURORA BOREALIS. This luminous appearance in the Northern part of the heavens, according to the account of Dr. Halley, was first observed January 30, 1560.

AUTOMETA. (*See Androides.*)

BACHELOR. The Degree of Bachelor in a college sense, was introduced in the thirteenth century, by Pope Gregory IX. In the middle ages the appellation appears to have been common for all degrees, between a mere gentleman and a baron. Thus we find the Lord Admiral, when he was neither an earl or baron, denominated a bachelor: "and it is too weete, that when the Admiral rideth to assemble a shippe of warre or other, for the business and affairs of the realme, if he be a bachelor he shall take for his day's wages four shillings sterling; if he be an earl or baron he shall take wages after his estate and degree." The term bachelor was also given to those who had attained to knighthood, but were not rich enough to maintain the dignity of a knight. Edward II. directed all persons who had £20 a year for life, to take the order of knighthood; they were distinguished by gilt spurs and a pennon or vane at the end of a lance.

BACK-GAMMON. This game some pretend to have been invented in Wales, prior to the Conquest, and to have derived its name from two Welsh words, bach cammon, little battle; others give the merit to the Saxons in the tenth century, deriving it from the Saxon words, bac zamen, back game. The board of the thirteenth century is not divided in the middle, and the points are not pyramidal, but parallelograms.

BAG-PIPE. The invention of this instrument is attributed to Mercury; it was called by the Greeks askaulos, and by the

Romans *tibia utriculoris*, and the players thereon *utriculorii*. Pennant says it was introduced into England by the Danes.

BAKER. The invention of making and baking bread was by the ancients ascribed to Pan; and according to Pliny, barley was used before any other sort of corn for the food of man: the practice of making leavened bread appears, from the histories of the earlier nations, and particularly from the scriptures, to be very ancient; this leaven, which was dough kept till it had become thin and sour, was also used by the Romans to raise their bread. Pliny says that *yeast* was employed for this purpose in his time, in Spain and Gaul; but the general opinion is, that the introduction of yeast or barm, which is the mucilaginous froth that rises to the surface of beer in the first stages of its fermentation, is of more modern date, being first used at Paris, about the commencement of the seventeenth century, and soon after prohibited as pernicious; however, we find it used in England in 1650.

The ancients had various kinds of bread made for particular purposes; our sea biscuit, so named from its being *bis coctus*, twice baked, is the *panis nauticus* of the Romans. The bread of the Anglo-Saxons was merely baked before the fire. In the reign of the Norman Kings it was made like a twelfth cake. Henry III. directed the bakers not to mark their bread with the sign of the cross, *Agnus Dei*, or any other sacred emblem. In the time of James I. horses were fed with bread instead of oats.

The learned are in great doubt as to the time when baking first became a particular profession. It is however agreed, that it had its origin in the East, and we find the *baker* of Pharaoh, in the time of Joseph, cast into prison: from the East the profession found its way into Greece. And into Italy, after the war with Pyrrhus, A. U. C. 583: till which time every housewife at Rome was her own baker; and this

custom was till very lately observed by the Mancunians, or inhabitants of Manchester. The Bakers were incorporated in London in 1307.

The invention of *Ovens* is by some given to Anos, an Egyptian, by others to the goddess Fornex; originally they were applied to the purpose of roasting the wheat, before the method of grinding corn and making bread was discovered; the Jews were probably the first who had any regularly constructed ovens, in which they were followed by the Romans; who erected bake-houses for the supply of their military stations. Furnaces for baking were known to the early Britons; this appears from the kiln burnt pottery which has been discovered in the British sepulchres, and from the British appellation of an Odyn or Oven remaining among us to this day.

BALANCES, or Scales, are noticed among the earliest inventions; we find Abraham weighing out the money he had given for the purchase of a burial-place for his wife. The steelyard, which was the ancient Roman balance, is still in common use. Scales with two basons have been found at Herculaneum. In the middle age John de Janua mentions a staff, with a thong leaded to weigh meat. The term "pair" of scales occurs in 1213. Ramsden lately constructed a balance for the Royal Society of so great a nicety, as to ascertain a weight to a seven millionth part; it turns on steel edges upon planes of polished crystal.

BALL. A species of game, which, according to Herodotus, had its origin among the Lydians; the most ancient amusement of this kind is distinguished with us by the name of *hand-ball*, and considered to be coeval with the destruction of Troy. Nennius mentions the Roman-British boys, and Malmesbury the Anglo-Saxons, as playing at ball.

During the reign of Charles V. of France, 1370, *palm*

play, hand tennis, or fives, was exceedingly fashionable among the nobility, and played by them for large sums of money; a line being traced on the wall, below which the stroke was faulty. Strutt also mentions this game as known in England about the same period. In the sixteenth century, *tennis-courts*, as now constructed, the ball being struck with a *racket*, were common in England, and the establishment of such places countenanced by the example of Monarchs, Henry VII. being esteemed a good tennis player; this game, it is supposed, was also known to the Romans.

The game of *cricket* is first mentioned in one of the songs published by D'Urfey, the Poet Laureat to Charles II., and appears to have been an improvement on a much more ancient game called *club-ball*, common in the time of Edward III.

Foot-ball, the *pila paganica* of the Romans, is mentioned by Fitz-Stephen, who lived in the time of Henry II.; this game was prohibited by Edward III., because it co-operated with other popular amusements to impede the progress of Archery. It was a favourite diversion, even among noblemen in the reign of James I. The game of *goth* was also practised in the reign of Edward III. *Trap-ball* is noticed in the commencement of the fourteenth century.

BALLADS—popular songs, of a political nature, were not unknown to the ancient Greeks and Romans, for we read that ballads were made to vilify Pericles. They are stated to have been introduced into England in the seventh century by Aldhelm, bishop of Sherborne, who, anxious to instruct his countrymen, then semi-barbarous and inattentive to their religious duties, took his station on the public bridge, as if a singer by profession, and by mixing sacred with lighter topicks, won their attention and ameliorated their minds. Cromwell during the Commonwealth, found himself under the necessity of prohibiting the singing of ballads; and it is observed by

a political writer of some eminence, that if one could but make the ballads of a nation, it would be of little consequence who made the religion of it. The great Cecil, chief minister to Queen Elizabeth, is said, from political considerations, to have made a most ample collection of ballads.

Ballads, considered as those trifling songs generally sung in the streets, Plutarch mentions to have been common among the Romans, and sold to servants and silly women. Our ancient ballad singers usually sung to a fiddle at taverns and fairs: the most common ballads being the tales of Sir Topas, Bevis of Southampton, &c. Street singing was common in the Anglo-Saxon æra, and the itinerants used to stand at the ends of bridges, like the Roman beggars. The most ancient English song, accompanied with the musical notes, perhaps anywhere extant, is the "Sumer is i cumen:" the date is about the middle of the fifteenth century. Ballads were usually printed in the black letter, till the beginning of the seventeenth century.

BALLOON (*see Air Balloon*).

BALLOT. The method of determining events by ballot, with different coloured balls, was practised by the ancients, though we have borrowed the term from the Venetians: the box or vase into which the balls were put is noticed by Apuleius, and is the hlot-bed of the Anglo-Saxons.

BAND. Henry VIII. is said to have been the first who wore a band or collar to his shirt. Lawyer's bands were first used by Judge Finch in 1615, and by the clergy a few years afterwards.

BANK. The republic of Venice may boast of having given the first example to Europe of an establishment altogether unknown to the ancients, by the formation of a public

company for money transactions. This republic, to relieve its necessities, levied in 1157 a forced contribution on the riches of its citizens, giving them in return a perpetual annuity of four pounds upon every hundred lent ; the lenders accordingly established a bureau or chamber for the receipt or repartition of this interest ; and the perpetual payment of the interest being guaranteed by the Government, the lenders were enabled to sell their annuity to any individual, and thus to procure the capital sum they had advanced, being sometimes more, and at other times less, according to the scarcity or value of money at the time the transfer was made. This bank supported itself with great credit till the invasion of the French in 1797, when a total failure ensued.

The bank of England was established at the suggestion of a person by the name of Pattison : and, in the year 1694, upon advancing to the Government the sum of £1,200,000, was incorporated under the name of the Governor and Company of the Bank of England. In 1743 the bank commenced upon receiving the subscriptions to the loans, for the public service. The present building of the bank of England was finished in 1734.

BANK NOTES. During the rebellion of 1745 a considerable run having been made upon the bank by the Jacobites, the bank refused to issue gold, which was the most easy of carriage, but directed the payments to be made in silver, and, it is said, with the view of gaining time, in sixpences : at the same time the principal merchants of London, that they might uphold the public credit, agreed to take the *notes* of the bank instead of cash, and to this may be traced the origin of bank notes. Bank notes and bank post bills for ten and fifteen pounds were issued in 1759. In the year 1797 the bank suspended cash payments, and issued one pound notes.

Saving Banks—for encouraging industry and economy among the labouring classes were instituted in 1816. The

first country bank was established by a Jew at Derby, in the year 1750. The number of private licensed banks in 1896 amounted to 764.

BANKERS. The ancient bankers were called *Trapezites* by the Grecians, and *Argentarii* or *Nummulari* by the Romans: their chief business was to put out the money of private persons to interest, or lend money upon interest, as also to exchange worn for new money, with a profit: the Roman bankers had their boards and benches for this purpose at the Forum, under the inspection of the town magistrate; and Beckman asserts they gave cheques and draughts, and paid money by bills, and dealt besides in exchanges and discounts. The Jews had also at an early period bankers or money changers, who carried on their business at the porch, or within the outer court of the temple. The Italian merchants who followed this profession were called Lombards, and they are supposed to have been the first who introduced the practice into England, taking up their residence in a part of London, called from them Lombard-street. For some time previous to the year 1640, the merchants used to deposit their cash for safety in the royal mint in the tower of London; but Charles I. having in that year made free with their money, the mint lost its credit, and the merchants afterwards lodged their money in the hands of the goldsmiths, making them their bankers, both to receive and pay for them, who in return allowed a small interest for the cash deposited.

BANKRUPT. This word is derived from the Italian, *banco rotto*, broken bench, it being the custom in Italy, when a banker failed, to break his bench, by which the public was informed that the person to whom the bank belonged was no longer in a condition to continue his business. The first law in this country respecting bankrupts was passed in 1543, when both their bodies and goods were placed under the control

of the Chancellor. In 1731 it was made death for a bankrupt to secrete his property or books, and John Perrot suffered under this law in 1761.

BANNERET—an ancient order of knighthood, being the promotion of the knight bachelor by honoring him with a square banner instead of a streamer, and thus placing common knights and esquires under his command: part of the ceremony was cutting off the end of the streamer, thereby making it a square banner. This order, the origin of which is not exactly known, is first noticed in our history in the year 1347, when Copeland, governor of Roxborough castle, having taken with his own hand David, king of Scotland, prisoner, was made knight banneret by Edward III., who was then laying siege to Calais, and to whom Copeland had repaired to make his excuses for not having delivered up his prisoner to Queen Matilda. The last person who was made Banneret was Sir John Smith, by Charles I., in the action at Edge-hill, for rescuing the royal standard. A knight banneret created by the king in person ranks by 5 Rich. II. next after barons, and has precedence before the younger sons of viscounts.

BANS of MARRIAGE. (*See Marriage*).

BAPTISM. This religious ceremony is supposed by many learned authors to have had its origin in the Jewish church, in which, as they maintain, it was the practice, long before our Saviour's time, to baptize proselytes or converts to their faith, as part of the ceremony of their admission: however, the general opinion seems to be that it is a ceremony peculiar to the Christian religion, and that no account of baptism, as a distinct religious rite, occurs before the mission of John the Baptist. In the earliest ages of the Christian church converts were admitted by baptism at any period of the year; but afterwards (except in cases of necessity) the feasts of Whit-

sun-tide, Easter, and Epiphany, were appropriated to this ceremony.

Sponsors, or *godfathers*, were instituted about the commencement of the second century, and were intended to guarantee the good conduct of such adult persons whom they had recommended as worthy of being admitted into the Christian church ; afterwards, when infant baptism was enjoined, which was at a very early period of the church, they were required to answer for the child's being brought up in the faith they professed for them ; however, catechumens in general were not forward in coming to baptism. St. Ambrose was not baptized before he was elected bishop of Milan, and some of the fathers not till the time of their death, as was also the case with Constantine the Great, it being the prevailing opinion of the primitive times that baptism, whenever conferred, washed away all antecedent stains and sins. In the early ages of the church the ceremony of baptism was performed by *immersion*, according to the practice of St. John, and agreeably to the etymology of the word baptizo, to plunge ; and public baptistery's or baths were constructed for this purpose about the commencement of the fifth century, and attached to the churches.

Although there does not appear to be any direct command to baptize *infants*, yet as circumcision was administered to the infant offspring of the Jews, by which they were admitted into the covenant of grace, baptism, being its substitute and anti-type, ought also to be administered to the children of Christians ; and we find that Irenæus, who was born about the time of St. John's death, mentions infants among the regenerate or baptized ; and Tertullian, about one hundred years after the apostles, though he advises parents to defer baptizing their children, except when their lives were in danger, speaks of the practice as generally received and observed in his time ; and from this period the general and uniform practice of the Christian church is very much in favor of infant baptism.

Fonts or small baths, for the purpose of baptizing children, are noticed about the close of the second century, it not being in that case deemed necessary for the administrator himself to go into the water. These fonts were introduced into England soon after the arrival of St. Augustin, and each parish was enjoined to provide one, either of wood or stone, which order was afterwards renewed by Edmund, archbishop of Canterbury, in 1236, and the right to a font afterwards became the distinguishing characteristic of a parish church. In the old church of St. Peter at Oxford, built by Grymbold, who came from Flanders into England in the time of Alfred, there was till lately a very ancient baptismal font, of a circular form and elegant sculpture, eleven feet in circumference, and of a proportionable depth; having the twelve apostles represented in separate niches. During the period of the commonwealth an order was issued for the removal of all fonts out of the churches, and that basons should be used in their stead; and though at the restoration this order was annulled, yet many of the fonts had been destroyed, and were not replaced.

The custom of *sprinkling* children instead of dipping them into the font, first allowed only in case of sickness, was introduced into this country from Geneva in the reign of Elizabeth; others, however, affirm that it was practised in England so early as the ninth century.

Tertullian is the first who mentions the *signing of the cross* as being used in private; it became general in the fourth century, and sometimes oil was used instead of water by the priest on this occasion:

Lay Baptism seems to have been allowed in the rubric of the English liturgy till the time of James I., when there was a considerable difference of opinion among the bishops on that subject, and at length it was considered as improper.

BAR. Throwing the bar of wood or iron was a common

exercise among the Saxons and Normans, and with other sports was prohibited by Edward III., lest it should interfere with the exercise of archery.

BARBERS, as a distinct profession, were common in Greece, but not known at Rome till about 299 years prior to the Christian æra, when it is stated Ticienus Mena brought several of them to that city from Sicily : they not only dressed the hair and beard, but cut nails. Plutarch mentions the cloth, the mirror, the chair, and their loquacity : the bason is the cantharus of the middle age. Barbers were probably the first surgeons, and in the middle ages were stiled barber-surgeons : they chiefly confined themselves to phlebotomy, and the pole which is still the sign of the barber's shop, was to shew he could breathe a vein as well as take off a beard, such a staff being to this day put into the hand of a person about to be bled by a village practitioner ; the white bind encompassing the staff represents the ribband for binding the arm. Anciently the barbers had a lute, viol, or some such musical instrument in their shop to amuse their customers while waiting.

BARDS. (*See Minstrels.*)

BARK, Peruvian. This most valuable medicine, was introduced into Europe, about the year 1643, and being strongly recommended by the Cardinal de Lugo, of the order of the Jesuits, was from him named the Jesuit's bark. The use of it as a cure for intermittent and other fevers, had been long known to the inhabitants of Peru, and other parts of the American Continent ; but was not in much repute among the European settlers, till its efficacy had been fully established in the recovery of the Countess del Cinchon, the lady of the Spanish Viceroy from a dangerous fever, from which circumstance it, for some time, was called the Cinchona

Bark ; it was brought into England in the year 1650, and is noticed in the *Mercurius Politicus* of Feb. 3, 1659, Sir Robert Tabor assuming the merit of having discovered the true method of administering it.

BARLEY. Mills for the manufacture of pearl barley, by which all but the very heart of the grain is ground away, were invented in Germany, and first used in Holland in 1600.

BAROMETER. About the commencement of the seventeenth century Galileo discovered that the pressure of the atmosphere on water would raise it, in a tube deprived of air, to the height of thirty-three feet from the surface, and thus proved that the cause of the ascent of water in pumps was not owing to the power of suction, and nature's abhorrence of a vacuum, the favourite opinion in those days, but to the weight of the atmosphere, pressing upon the surface of the water in the well, and forcing a part of it up the pipe. This experiment led Torricelli, the disciple of Galileo, about the year 1645, to invent the Barometer, now in general use, for he justly considered that if a column of water of thirty-three feet in height was equal in weight to one of air, having the same base, a column of mercury whose specific gravity is about fourteen times heavier than that of water, would be raised in a vacuum to a proportionable height, or about twenty-nine inches and a half; accordingly having filled a glass tube with mercury, and inverted it into a basin of the same liquid, he found the mercury in the tube to descend till it stood about twenty-nine inches and a half above the surface of that in the basin. It was, however, some time after the Torricellian experiment had been made, and even after it had been universally agreed that the suspension of the mercury was owing to the weight of the atmosphere, before it was discovered that this pressure of the air was in itself variable, though the tube was kept in the same place; at

length the variations of altitude in the mercurial column, began to attract general attention, and the philosophers, by carefully noting these variations, could not fail to remark that the changes in the height of the mercury were accompanied or quickly succeeded by changes in the weather. Hence the instrument obtained the name of the *weather-glass*, and was generally made use of with a view to the foreknowledge of the weather. About the year 1648, Pascal, a Frenchman, first applied the Barometer to the purpose of ascertaining the weight of air at different elevations from the level of the sea, which led to the suggestion of forming a scale by which the altitude of mountains and balloons might be ascertained. Various kinds of Barometers have been constructed, as the common circular or wheel one, by Dr. Hook, in 1668; the upright or pendant by the Amatons, in 1695; the horizontal or rectangular Barometer, by Benonilli, in 1710.

BARON, a degree of Nobility. The first mention of which in our history is to be found in a fragment of the laws of Canute, where the Baron is stated to be the next in rank to the Earl, and is directed to provide four horses, two saddled, and two not saddled, two swords, four lances and as many shields, one helmet, one coat of mail, and fifty marks of gold, as his quota towards the defence of the country. Some of our English Antiquarians are of opinion that the title began with the Normans, in the room of the Anglo-Saxon Thane, and that Barons were originally the same as our present Lords of Manors, to which the name of Court Baron (which is the Lord's Court and incident to every manor) gives some countenance. It seems formerly there were two orders of Barons, the *great Barons* who held immediately of the King in capite, and the *lesser Barons* who held of the first by military service. The former were summoned to Parliament by the King's Writs, while the latter

were summoned by the Sheriff of the county; thus things continued till the 49th Henry III., when in the lieu of the lesser Barons, the Sheriffs were directed to cause two Knights in every shire to be chosen, and one or two Burgesses for each borough, to represent the body of the people residing in those counties or boroughs, which gave rise to the separation into two houses of Parliament. By degrees, therefore, the title of Baron became confined to those who held in spite of the King, and were in consequence summoned as Lords to the upper house, and which continued till the reign of Richard the Second, who, by his letters patent, first made the title of Baron a mere title of honour without reference to landed property. The first raised to this dignity by patent was John de Beauchamp, of Holt Castle, who, in 1387, was created Baron of Kidderminster, in Worcestershire, to him and his heirs male. A Baron now ranks next to a Viscount, he wears a parliamentary robe of scarlet cloth, lined with white satin, having on the right side two guards of Minerva or ermine, to signify his *degré*; his coronet is a ring of gold, having thereon six pearls, and was granted by Charles II. in 1661, before which time he wore a crimson cap turned up with ermine, and on the top a tassel of gold. The Prior of St. John's of Jerusalem was styled *Primus Angliæ Baro*, but it was with respect to the Lay Barons only, for he was the last among the Spiritual Barons. The Judges of the Court of Exchequer are also called Barons, that office being formerly held by Barons of the realm.

Among the Franks and other Northern nations the word Baron was synonymous with that of man, whence our *Baron* and *femme* in law.

BARONET. This rank, which is hereditary, immediately follows that of a Baron, and has precedency above all Knights except those of the Garter. The dignity of Baronet is given

by patent, and was founded by James I. at the suggestion of Sir Robert Cotton, in 1611, as a means of raising money for the defence of the province of Ulster, in Ireland, then harassed extremely by the rebels; for which purpose those who aspired to this rank, were to pay into the Exchequer a sum sufficient to maintain thirty soldiers for three years together, which at 8d. per head amounted to £1095. The title *Sir*, though he is not dubbed a Knight, was granted by a peculiar clause in the patent: and it is also declared that no intermediate honour between Barons and Baronets should be created. The first person who had the honor of being made a Baronet of England was Sir Nicholas Bacon, of Redgrove, in Suffolk.

Baronets of *Ireland* were instituted 30th Sept. 1619, and possess the same privileges as those of England.

Baronets of Nova Scotia were instituted in *Scotland* by Charles I., the 28th May, 1625, for advancing the plantations of Nova Scotia, in America.

BARRELS. (*See Casks.*)

BARRISTER. The Romans, in the first ages of their state, held the profession of an advocate in great honor, and the seats of their bar were crowded with senators and consuls, who thought it an honor to be employed in defending the people; and as they would not condescend to receive pecuniary remuneration they affected to be styled *comites* and *patroni*, conceiving their clients were not less obliged to them than freedmen to their masters: but no sooner were luxury and corruption brought into the commonwealth than the bar became a sharer in them, and zeal and eloquence were sold to the highest bidder: the tribune Cincius, to put a stop to this abuse, procured a law to be passed A. U. 549, whereby the advocates were forbid to take any money of their clients, and which law was frequently attempted to be enforced by the emperors.

Barristers among us were anciently called *apprentices* of the law, and seem to have been first appointed by an ordinance of King Edward I. about the year 1291. In the reign of *Mary* a consultation fee was ten shillings, and retaining fees were common.

BASKETS, of elegant workmanship and high price, were exported in large quantities by the ancient Britons, being mentioned by Juvenal, and also by Martial, amongst the extravagant and expensive furniture of the Roman tables at that period.

A basket I by painted Britons wrought,
And now to Rome's imperial city brought.

BASONS. Large basons for washing are represented on ancient Greek tombs.—Du Cange mentions the *water even* and *bason*.—In the Berkeley MSS. we have a shaving bason, of silver weighing sixty ounces.

BASSET. A game upon the cards, invented by a Noble Venetian, for which it is said he was banished. It was introduced into France by Signor Justiniani, Ambassador of Venice, in 1674. Louis XIV. issued severe laws against it, to elude which Basset was attempted to be disguised under the name of *Pour et Contre*, which occasioned new arrests and prohibitions of parliament.

BATH. The practice of bathing in rivers was common among all the nations of antiquity : but it is doubtful whether the ancient Greeks constructed any *public* baths, for they are not noticed at Rome till the time of Pompey, when the custom began of bathing every day : under the emperors the *Thermæ* or public baths were extremely magnificent. The first instance of *cold bathing* being practised *medicinally*, is reported to be that of Melampus's bathing the daughter of

the king of Argos ; and the use of *warm bathing* was introduced by Medea, who was said to boil people alive because Pelias, king of Thessaly, died in a warm bath under her hands. The city of Bath takes its name from the public baths constructed there by the Romans.

BATH. An order of knighthood, which, it is supposed, originated with the Franks, and received its name from the candidates being required, among other ceremonies, to bathe themselves, thereby denoting that such as were admitted to this degree should be of a pure mind and honest intentions. Antis asserts that the order was introduced into this country by the Normans, and that William the Conqueror, and the succeeding kings of England, conferred this degree of knighthood as well in Normandy as in England : however, we have no positive account of it till the reign of Richard II., who created four knights of the Bath, and his successor, Hen. IV., at his coronation, which took place on the 13th of Oct. 1339, conferred this honour on 46 esquires, "who had watched all night before, and had bathed themselves : " afterwards it became customary for the kings of England, previous to their coronation, or that of their queens, to create a certain number of their friends knights of the Bath : but it does not appear that any were made from the time of Charles II. till the order was revived by Geo. I. on the 27th of May, 1725. His present majesty has divided this order into *knights grand crosses, knights companions, and companions.*

BATTLE-AXE.—an ancient military instrument noticed by Homer, and supposed to be the favourite weapon of the Amazons : it was also used by the Gauls, and not unknown to the ancient Britons, though brought into general use, especially that kind called *bipennes*, by the Danes. The Welch found this weapon serviceable in the battle of Agincourt in 1415. The last time it is mentioned in our history

was at the battle of Tewksbury, when Lord Wenlock was killed with a blow from a battle-axe by the Duke of Somerset : battle-axes have since degenerated into the halberds or partisans, used on state occasions by the band of gentlemen-pensioners and yeomen of the guard.

BATTLEDORE and Shuttlecock, was a common amusement in the fourteenth century, and played by adults in the time of James I.

BAYONET. Formerly the muskets were so long and heavy as to require a *rest* or kind of fork to support them when fired : sometimes these rests were armed with a kind of sword-blade, called a *swine's feather*, which being placed before the musqueteer when loading, served to keep off the cavalry. During the commonwealth rests were disused, and the swine's feathers were attached to the *muzzles* of the muskets : soon afterwards they were adopted on an improved principle by the French at Bayonne, from whence they were called *bayonets*, and were used with great success by them in 1689, and particularly at the battle of Turin in 1693. Bayonets were introduced into our army at the recommendation of the Duke of Albemarle, in the time of Charles II. : at first they were fixed into the muzzle of the gun after firing, and this continued to be the case till the commencement of the eighteenth century, when they were attached to the musket by means of rings, and afterwards a *spring* was added to make them more secure.

BAYS or Baise. The manufacture of this coarse woollen stuff was introduced into England by the Flemings, who being persecuted by Philip II. of Spain on account of their religion, sought refuge in this country in the commencement of Elizabeth's reign. A considerable manufactory of it was established at Colchester in 1660.

BEACONS, or *Lighthouses*, were anciently called *Pharos*, from the one constructed at Alexandria, by Ptolemy Philadelphus about 300 B. C.

During the Saxon Government individuals were appointed to erect beacons for the purposes of navigation as occasion might require, and the expences were defrayed by the county. In the reign of Edward III., *pitch boxes* were made use of for this purpose; but the importance of beacons does not appear to have been fully considered by Government, till about the year 1565, when by an order of Council the authority of erecting them, wherever they might be deemed necessary, was vested in the Corporation of Trinity House. The first regular light-house in England was that constructed by Winstanley at the Eddystone near Plymouth, in 1697, and in which he unfortunately perished in a dreadful storm in Nov. 1703. It was afterwards rebuilt of wood, and accidentally burnt in 1755. Another of stone, erected by Smeaton in 1759, experienced the same fate in 1770. The present one was erected by the same architect in 1774.—Ezekiel Walker, of Lynn Regis, first suggested the application of *reflectors* in lieu of wood, and which plan was adopted in the light-house on the coast of Norfolk, in 1779.

BEADLE. From the Saxon *bidel*, a public crier, in which sense bishops, in some ancient manuscripts in the Saxon language, are called *bedels of God*. The church beadle was a kind of verger, whose station, in the thirteenth century, was at the door of the church, his dress being, as now, a blue gown.

BEADS, made of amber, jet, ivory, bone, &c., have been frequently discovered in the ancient British barrows, and it is presumed were manufactured by the Druids. In the year 336, the Christians first made use of them in their devotions, which principally consisted in repeating the Lord's Prayer a

certain number of times, counted off by means of beads. Chaplets of beads were therefore in the middle ages called *Paternosters*. The *Bead-roll* was the catalogue of those who were to be mentioned at prayers, and the King's enemies, in the time of Henry VII., were thus cursed by name in the bead-roll at Paul's. The *bidding of the beads* was an exhortation from the priest to say prayers (or repeat a certain number of ave marias, &c.) privately, for the soul of a deceased person.

BEAR. This animal was formerly an inhabitant of our Island, and frequently sent over to Rome, where it was in a certain degree tamed, and led about by showmen, as at present; the *baiting* of bears, according to Fitz Stephen, was a common amusement in England in the reign of Hen. II. Stow relates that the first *bear gardens* in London were in the district of St. Saviour's parish, called Paris Garden. When Queen Mary visited her sister the Princess Elizabeth, during her confinement in Hatfield House, a grand exhibition of bear-baiting was made for their amusement. Queen Elizabeth also indulged in this species of entertainment, after her accession to the throne; and we find from the Duke of Northumberland's Household Book, that Noblemen entertained servants called bear-wards, who had the care of the breeding and feeding of these animals.

Bear grease, as a preservative of the hair, is noticed by Pliny.

BEARDS. Athenæus observes that the Greeks wore their beards till the time of Alexander the Great, though Philip his father, as well as Amyntas and Archelaus, his predecessors, are represented on medals without beards. The Jews also wore a beard on their chin, but not upon their upper lip or cheek. Barbers, as before mentioned, were introduced at Rome, about 299 years before Christ, and Pliny

observes that Scipio Africanus was the first Roman who ventured on the bold experiment of shaving his beard regularly every day, which led to smooth chins being the universal fashion, and therefore servants and slaves were forbidden to shave themselves: thus a beard, once a mark of reverence and honour, became degraded into a badge of servitude. In this state of disgrace it continued till the time of Adrian, whose chin being disfigured by some natural scars, he was content to let his beard grow in order to conceal them, and thus by his example again brought beards into fashion among the Romans.

The ancient Britons, in the time of Cæsar, shaved every part except the head and upper lip, the hair of which they, as well as the Gauls, allowed to grow to a great length. The Anglo-Saxons were accustomed to wear their beards, except the clergy, who were obliged to shave in conformity to the Western churches. The Normans, soon after the conquest, compelled all the English to shave themselves, which at that time was considered so great an act of tyranny, that many preferred to abandon their country than submit to the loss of their hair. In the fourteenth century long beards came again into vogue, and continued so till towards the close of the sixteenth century, when they dwindled to mustachios and whiskers, and afterwards the practice of shaving the whole face became general. Henry VIII. directed all persons at court to cut their beard short: he used to wear his beard knotted. Queen Elizabeth ordered that no Fellow of Lincoln's Inn should have a beard of above a fortnight's growth. Clipped beards were however common during the reign of the Stuarts.

BEDS: The ancient Greeks and Romans originally slept upon the skins of beasts; afterwards they made use of loose rushes and heath or mats; during the government of Cæsar goose feather beds and pillows were introduced; they were generally imported from Egypt, on account of the number

of geese there kept, sometimes the beds were stuffed with peacock's feathers, which were considered exceedingly soft and luxurious. The beds of the inns were usually filled with the soft down of reeds. The beds of the ancient Britons consisted also of the skins of beasts, dried leaves, rushes, &c. but on the introduction of agriculture into the interior of the island, straw being found more convenient than rushes was generally adopted, and continued in use even in the Royal Chambers of England till about the period of the Crusades, when beds filled with *feathers, cotton and wool*, were introduced from the East. In 1495 the materials for beds and mattresses were, with the view of preventing sickness, regulated by an Act of Parliament; at this time feather beds were common, and those filled with horse hair, goat's hair, neat's hair and fen down, were prohibited.

BEDSTEADS were common among the Egyptians and Hebrews. The Greeks and Romans, from the greatest simplicity, constructed them by degrees of the most surprising magnificence. Pliny assures us it was no new thing to see them covered over with plates of silver, and some were so high as to require steps to ascend them; their common bedsteads are noticed as being infested with bugs. It is doubtful whether the Romans had any tester or curtains.

Although it is probable the Romans introduced bedsteads into this country, yet the common people for many ages slept on the floor, and generally the whole family in one room. The bedsteads of the Anglo-Saxons had sometimes a thick boarded bottom, and sometimes sacking, they had also a tester and curtains which slid with rings upon an iron rod.

BEE. Many authors among the ancients have written an account of this useful little insect; Aristomachus is said to have studied their pursuits for sixty years; Philliscus retired

into a desert wood that he might have the opportunity of observing them to better advantage ; Aristotle has written on the subject, and the partiality for this little animal passed from the Romans to the Anglo-Saxons, among whom they were great objects of theft.

BEE-HIVES. The Romans made them of transparent stone, that they might see the bees at work ; the ancient English bee-hives were made of unpeeled willows.

BEER. It has been generally supposed there was no malt liquor known by the appellation of beer, as distinguished from the softer beverage of ale, till about the commencement of the sixteenth century, when the use of hops in brewing had been introduced into this country from the Netherlands : yet we find that mention is made of beer in 1482, when James III. of Scotland, to prevent the adulteration of wine, passed a law that no person should mix wine or beer under the pain of death ; and the Fædera states that our Henry VII. in 1492 granted a license to a Fleming therein named, to export fifty tons of ale, called beer ; and that in the same year Petrus Vanek, who attended the king into France, was a beer brewer of Greenwich, in Kent. Beer, as brewed with hops, might not, however, be known in England till the time before mentioned, especially as the juice of the plant was, for several years after its first application to this purpose, considered as extremely injurious, and prohibited on the continent ; therefore wormwood and other plants were made use of in brewing, and found in a great measure to answer the intention of hops, by preserving the malt liquor for a considerable time, and rendering it applicable to naval or military purposes.

BEGGARS. Neither the Egyptians, Greeks, or Romans, permitted beggars to stroll about the streets. In the Anglo-Saxon period they were very common, and like those of the

present day, were generally ballad-singers. A law was passed in the reign of Henry VIII., by which all sturdy beggars pretending to be blind, &c., convicted of a second offence, should be executed as felons, which law was soon afterwards repealed.

BEHEADING. A capital punishment of great antiquity, and common to all barbarous nations. It was applied by the Romans to the military under the term *decollatio*, and in modern times has become the punishment of nobles, being reputed not to derogate from nobility as hanging does. It was introduced into this country by the Normans, and Waltheof, earl of Northumberland, in 1075, was the first nobleman beheaded.

BELFRY. This word is compounded of the Teutonic; "bell;" and "fried," *peace*; because bells were originally hung for preserving the peace. According to Du Cange, a belfry originally denoted a high tower, whereon centinels were placed to watch the motions of the enemy, and to give notice of danger by ringing the bell; and where belfries were not erected the towers of churches were appropriated to that purpose, and thus received the name of belfries.

BELL. Any attempt to trace the origin of bells would be useless, those of a small size being very ancient. According to the Mosaic law, the lower part of the blue robe worn by the high priest in religious ceremonies, was to be adorned with pomegranates and gold bells intermixed at equal distances, which it is conjectured was meant to give notice of his approach to the sanctuary, and thus escape the punishment of death annexed to an indecent intrusion. At first bells seem to have been appropriated to religious purposes, and were common in all the heathen temples; afterwards the Greeks and Romans used them for civil and military purposes.

Saint Paulinus, who about the year 400 was bishop of Nola, in Campania, is said to have been the first who introduced bells into churches, previous to which the Christians made use of rattles, "*sacra ligna*," to call the congregation together, no bells being allowed by Government to a proscribed sect—hence bells were called by the Romans *nolæ*, and sometimes *campanæ*.

It is said that bells of a *large* size were applied to ecclesiastical purposes in some of the monastic societies of Caledonia so early as the sixth century : they are noticed by the venerable Bede in 670, and appear to have been common from the first erection of parish churches in this kingdom. Ingulphus informs us that Terketulus, abbot of Croyland, who died about the year 870, gave a great bell to the church of that abbey, which he named Guthlac, and it is stated that St. Dunstan about the year 970 cast two of the bells of Abingdon abbey with his own hands.

The Chinese were formerly celebrated for the magnitude of their bells : at Nankin there was one twelve feet high, seven and a half in diameter, and twenty-three in circumference—but this has been greatly surpassed by one built at Moscow by order of Anne, late empress of Russia, which is stated by Mr. Cox to have been nineteen feet high, sixty-three feet eleven inches in circumference, and twenty-three inches thick, and weighed 432,000lbs.

Brand says the custom of *muffling* bells was introduced into this country after the restoration ; and that the use of bells in the time of mourning was formerly prohibited.

The *passing bell*, according to Mabillon, anciently served two purposes ; one of which was engaging the prayers of all good people for departing souls ; and the other was, driving away the evil spirits which were supposed to haunt the bed and house, and ready to seize their prey, but kept at a distance by the ringing of this bell. Durand, in his *Ritual*, written about the end of the twelfth century, speaks of it as an old and well established custom :—

“When thou dost hear a toll or knell,

“Then think upon *thy* passing bell.”

The bell of St. Sepulchre's commenced tolling for prisoners on the morning of their execution in 1605.

The custom of *baptizing* bells is very ancient : before bells were hung they were washed, crossed, blessed, and named by the bishop, generally after some saint, that the people might think themselves summoned to divine service by the voice of the saint whose name the bell bears : this practice was, however, prohibited by Charlemagne in 789, but was soon afterwards revived, and on the restoration of the Bourbon dynasty the bell of the church of Notre Dame at Paris was regularly baptized, and received the name of the Duke and Duchess of Angouleme on the 15th of November, 1816.

The practice of *ringing the bells in change* or regular peals is said to be peculiar to the British nation—whence Britain has been termed the ringing island. This custom seems to have originated with the Anglo-Saxons. Ingulphus states that besides the large bell before noticed as having been given by Terketulus to Croyland abbey, he also, sometime afterwards, gave six other bells, all of which rang together, and were the first tuneable bells in England ; and it is certain this diversion was common in England long before the Conquest. There are now several societies of ringers in London, particularly one known by the name of the college youths, of which Sir Matthew Hale, lord chief justice of the court of King's Bench, was in his younger days a member.

The uses of bells are summed up in the following Latin distich :—

Laudo Deum verum, plebem voco, congreco clerum,

Defunctos plero, pestem fugo, festa decoro.

The Mahometans make no use of bells, considering them as prophane ; but the people are summoned to the mosques by the voice of the public crier from one of the towers or minarets.

BELL-MEN. Among the Greeks, those who went the nightly watch rounds in camps or garrisons carried with them a little bell, which they rung at each sentry box to keep the soldiers, appointed to watch, awake : a bell-man also walked in funeral processions, at a distance before the corpse, not only to keep off the crowd, but to advertise the flamen dialis to keep out of the way, lest he should be polluted by the sight or by the funeral music. The Romans in the time of Augustus, had bell-men whose occupations and duties seem to have been similar to those of the present time. They are first noticed in London in 1556.

BELLOWS. The invention of this machine is attributed by Strabo to Anacharsis, who flourished about 600 years before the Christian æra : but Homer, who lived long before his time, describes Vulcan as employing twenty pair of bellows at once in the formation of the shield of Achilles—

Soon as he bid them blow, the bellows turned
 Their iron mouths, and where the furnace burned
 Resounding breathed—at once the blast expires,
 And twenty forges catch at once the fires.

The invention of the wooden bellows, which have been introduced in metallurgic operations instead of those of leather, is attributed to the Germans, though neither the time nor the author can be accurately traced. Reyher, in his dissertation on air, printed at Kiel in 1669, informs us that about eighty years ago a new kind of bellows, which ought to be called the pneumatic chests, was invented in the principality of Cobourg by two brothers, Martin and Nicholas Schelhorn, who kept the invention secret. Calver says that “these bellows were first employed in the forest of Hartz ; and that in 1621 Lewis Psannenschmid, from Thuringia, settled at Ostfield, near Geslar, and began to make wooden bellows, which circumstance so irritated the bellows-makers of that place that they conspired against him, and threatened him with

death, so that he was under the necessity of procuring the particular protection of the Government; he would not, however, disclose his art to any one except his son, who, as well as his grandson a few years ago, had the making of all the bellows in the forest." From Germany the art of making them was introduced into some parts of France and Sweden, and became general though various parts of Europe. Dr. Plott, in his *Natural History of Staffordshire*, describes one of these wooden bellows as being used in the copper works at Ellaston.

In the oldest smelting houses the bellows were moved by a handle, like those of the smith's forge: but the art of putting them into motion by means of a water wheel having been also discovered by the Germans about the close of the sixteenth century, it became universally adopted till superseded by the more powerful effect of steam.

In the thirteenth century bellows-blowers were attached to the royal kitchen, and formed part of the establishment: their duty was to see that the soup was neither burnt or smoked.

A bellows for the purpose of inflating the lungs was invented by Mr. Gorcey in 1788.

BELT. This military girdle is of great antiquity, being frequently mentioned in scripture. It was generally ornamented in the richest style; and in some of the most magnificent illuminations of our ancient manuscripts, even in the same picture, the sword is represented as indiscriminately belted on the right side or the left.

In later ages the belt was given to a person when he was raised to knighthood; whence it has also been used as a badge of the knightly order.

BENEDICTINE MONKS. This order, which was founded by St. Benedict in 480, and had subsisted in this country from the time of the mission of St. Augustin in 596, and, besides

the metropolitan church of Canterbury, had founded most of the monasteries and all the cathedrals in England, was abolished by order of Henry VIII., and by degrees reduced to one single man, Father Buckley, who in 1607 procured a re-establishment of the congregation at Dowey in the Netherlands, where it still subsists in a kind of dependency on that of St. Valladolid in Spain. Benedictines were also frequently called the black friars, from the colour of their habit.

BENEDICTIONS. The custom of receiving benedictions by bowing the head before the bishop is very ancient, and was so universal that emperors themselves did not decline this mark of submission.

BENEFICE. Till the fourth century the revenues of the church consisted principally in alms and voluntary contributions, and were distributed under the directions of the bishop; but when the church came to possess lands, parts thereof were assigned for the subsistence of the clerks, and called benefices, of which we find some traces in the fifth and sixth century: but it does not appear that the allotments were positively defined till about the twelfth: at first each was contented with a single benefice; but pluralities were by degrees introduced on a plea that in some places a single benefice was not thought a competency.

By a return made to Parliament in 1817, the number of benefices in England were stated to be 10,421; the glebe houses were 5,417, and the number of resident clergy 4,500; there were then 11,743 churches and chapels, and about 150 have been since built.

BIBLE. So called from the Greek Biblion, the book, and that from biblos, the Egyptian reed or papyrus from which the ancient paper was procured. The Jews called the Old Testament mikra, that is a lecture. The list of books con-

tained in the Bible, called the canon of scripture, consisted originally of but the five books of Moses, called the Pentateuch, no others being added till after the Babylonish captivity, when the remaining books of the prophets and psalms were completed by Ezra, who collected and perfected a complete edition of the Holy Scriptures. The original of the Pentateuch had been carefully preserved in the ark, and being discovered in the Temple by Hilkiah during the reign of Josiah, copies of it were ordered to be taken and distributed among the people. The autograph or original copy of the law was afterwards burnt with the city and temple by the Babylonians.

The long captivity of the Jews had tended greatly to corrupt the Hebrew language ; Ezra, therefore, thought proper to write the Bible in the Chaldean as more commonly spoken, though the Samaritans, who acknowledged no other part of the sacred writings but the Pentateuch, still retained the Hebrew character. The Banonians pretend they have the original compilation of Ezra, in their church of Dominie, and that it is written upon a sort of leather, made up in a roll according to the ancient manner. The books contained in the canon of the Jews were divided by Ezra into three parts, the Law, the Prophets, and the Cetubrim or Hagiographa ; the first contains the five books of Moses ; the second includes Joshua, Judges, Ruth, Samuel, Kings, Chronicles, Ezra, with Nehemiah, Esther, Isaiah, Jeremiah, with Lamentations, Ezekiel, Daniel, and the twelve minor Prophets ; and the third class contains Job, the Psalms, Proverbs, and Ecclesiastes. The whole number amounting to twenty-two being equal to the letters in the Hebrew Alphabet. The canon was closed by Malachi fifty years after Ezra, and about 400 B. C.

With respect to the authors of the Old and New Testament, it may be observed that the Pentateuch written by Moses is supposed, with some few additions, to have been put

together by Samuel, and that the books of Joshua and Judges, the book of Ruth, and the first part of the book of Samuel was also written by him ; the latter part of the first book of Samuel, and the second book were, written by the Prophets, Nathan and Gad, who succeeded Samuel. The books of Kings and Chronicles are extracts from the records of the succeeding prophets concerning their own times, and from the public genealogical tables made by Ezra ; the books of Ezra and Nehemiah are collections of like records, some written by Ezra and Nehemiah and some by their predecessors ; the book of Esther was written by some eminent Jew, in or near the times of the transactions there recorded, perhaps Mordecai : the book of Job by Moses, or a Jew of an uncertain period ; the Psalms by David and other pious persons ; the books of Proverbs and Canticles and perhaps Ecclesiastes by Solomon ; the Prophecies by the Prophets whose names they bear, and the books of the New Testament by the persons to whom they are usually ascribed. The New Testament was written in Greek, except the Gospel of St. Matthew, which is said to have been composed in Hebrew ; some few have thought that the Gospel of St. Mark and the Epistle to the Hebrews was written in Latin.

As the Jews looked down with contempt on the neighbouring nations or Gentiles, and were in turn despised by them, it was not till after their captivity that any of their laws and ceremonies were divulged ; the first version of the Bible was that of the *Septuagint* into Greek, said to have been performed by seventy or seventy-two Jewish interpreters in obedience to the command of Ptolemy Philadelphus, about 283 years before the Christian *Æra*. The manuscript Hebrew Bible preserved in the Bodleian Library is about 830 years old.

The best *Hebrew Bibles* are those printed under the inspection of the Jews at Pesaro and Bresse in Italy, and at Soncinum, in 1486.

The first printed *Greek Bible* was published under the direction of Cardinal Ximenes, of Spain, in 1515, and inserted in the Polyglot Bible, called the Complutensian Bible.

The *Ancient Vulgate*, called also the the old Italian or vulgar *Latin Bible*, was translated from the Greek Septuagint for the use of the Latins soon after their conversion to Christianity; nothing, however, is remaining of this but the Psalms, Wisdom and Ecclesiastes. The first Latin Bible that was printed, called the *Modern Vulgate*, seems to have been also performed under the direction of Cardinal Ximenes, and included in the Bible of Complutum. R. Stephens and the doctors of the Louvain took great pains in correcting this edition; and an improved one was published by Stephens in 1540: several other editions, with alterations and amendments were published till the time of Popes Sextus V. and Clement VIII., since which no alterations have been allowed, except in comments and separate notes. The correction of Clement VIII. in 1592 is now the standard bible throughout all the Romish church.

If we enquire into the version of the *bible of our own country*, we find that Aldhelm, bishop of Sherborne, in the commencement of the eighth century made an *English Saxon version* of the psalms, and that Eadfrid or Ecbert, bishop of Lindesferne, about the year 730, translated several of the books of scripture into the same language. It is also said that the venerable Bede translated the whole bible into Saxon, and that he had just completed, with great difficulty, the translation of the gospel of St. John on the very day and hour of his death, which happened on the 26th of May, 735, being then sixty-two years of age: his disciple, Cuthbert, asserts, however, that he only translated the gospels. Some will have it that Alfred in 890 translated a great part of the scriptures into his own language—at least that he set about a translation of the psalter, which he did not live to finish. William of Malmesbury states that king Ethelstan directed a translation

to be made of the Old Testament out of Hebrew into English-Saxon : probably some Jews, converted to Christianity, had the superintendence of this work.

The earliest *English translation* of the bible is that by J. Wickliffe about the year 1360 : it was never printed, but there are manuscript copies of it in several of the public libraries.

William Tindall, assisted by Miles Coverdale, in 1526, first printed abroad the New Testament in the English language ; but most of the copies were bought up and burnt by order of bishop Tunstal and Sir Thomas More : however, in the year 1532, Tindall and his associates finished the whole bible, except the apocrypha, and likewise printed it abroad ; and while preparing for a second edition he was arrested and burnt for heresy in Flanders. On Tindall's death his work was carried on by Coverdale, under the assumed name of Matthews, in conjunction with John Rogers, superintendant of an English church in Germany, and who unfortunately became the first martyr in the reign of Queen Mary. Matthews, alias Coverdale, printed his bible at Hamburgh in 1537, and dedicated it to Henry VIII., and through the interest of Archbishop Cranmer procured a license for publishing it in England under the name of *Matthews's Bible*.

The first bible printed by authority in England and publicly set up in churches was the version by Tindal, compared with the Hebrew, and in many places amended by Miles Coverdale, afterwards bishop of Exeter : this was examined by Archbishop Cranmer, who added a preface to it, whence it was called *Cranmer's Bible* : it was printed by Grafton in 1540 ; and by a royal proclamation every parish was obliged, under a penalty, to set one of the copies in its church. This bible was suppressed by Queen Mary, but restored by Elizabeth, and a new edition published in 1562.

In the year 1568 Archbishop Parker published a new translation of the bible ; and being assisted by several of the

bishops and other learned men it received the denomination of the *Bishop's Bible*, as also the Great English Bible. This translation was used in the churches for forty years, though a bible printed by some English exiles at Geneva in 1560 was more read in private houses.

Many exceptions having been taken to the translation of the bible by Parker and the bishops, a conference on the expediency of a new translation was held at Hampton Court in 1603, under the direction of James I., which led to his proclamation dated in 1604, wherein fifty-four learned persons were appointed to undertake a new translation, who immediately entered upon their work, and in 1613 published the bible now in common use, and dedicated it to James.

The first *polyglott* bible was published by Cardinal Ximenes in 1515 in six volumes : it contained the Hebrew text, the Chaldee paraphrase on the Pentateuch, the Greek version of the LXX., and the ancient latin version.

With respect to the division of the bible into *chapters* and *verses*, it appears that the five books of the law were divided by Ezra into fifty-four sections—a section being read on every sabbath in the year : afterwards when the Jews were prohibited from reading the law by Antiochus Epiphanes, they substituted fifty-four sections out of the prophets, the reading of which was ever after continued :—thus, when the reading of the Law was restored by the Maccabees, the section which was formerly read every sabbath out of the Law served for their first lesson, and the section out of the prophets for their second lesson ; and this practice was continued in the time of the apostles. These sections were divided into verses, called by the Jews, *pesukim*—it being customary to read the Law, after the return of the Jews from their captivity, first in the Hebrew or dead language, and then by an interpreter in the Chaldee language, period by period : the manner in which these divisions are now distinguished in the Hebrew bibles is by two great points at the end of them, called *saph pesuk*—that is, the end of the verse : but the division of the holy

scriptures into chapters as at present (except the psalms, which appear to have been always divided as they now are) is attributed by some to Stephen Langton, Archbishop of Canterbury, in the reigns of John and Henry III., though it really owes its origin to Cardinal Hugo, about the year 1240, the author of the first scripture concordance, with the view of rendering this work an useful index to the scripture: these chapters were afterwards subdivided by him, not into verses, but by the letters A, B, C, D, E, F, G, placed in the margin of the page, at an equal distance from each other: in some all the seven letters were used; in others fewer, as the length of the page required: and this mode of indexing was common till about the middle of the last century. In 1445 Nathan, a learned rabbi among the western Jews, finished a concordance to the Hebrew bible in the manner of Hugo, and introduced his division of the Hebrew bible into chapters, improving on the plan by introducing the ancient division of verses and numbering them, by placing the Roman numerical letters in the margin at every fifth verse. R. Stevens, in his latin bible, published at Paris in 1557, and his son, H. Stevens, in his Greek testament, made the same division of chapters into verses, which method was also adopted in the English bible published at Geneva in 1560, and those published in this country. In 1661 Athias, in his edition of the bible, introduced the Indian or Arabic figures instead of the Roman letters, and placed them at every verse, as is now customary.

The *price* of a small well written bible in 1274 was thirty pounds, which is equal to £200 of our present money.

The following curious observations have been made on the bible, and which it is said employed three years:—

	In the old Testament.	In the New.	Total.
Books	39	27	66
Chapters	929	260	1189
Verses	23,214	7959	31,173
Words	592,493	181,253	773,746
Letters ..	2,728,100	838,380	3,566,480

The apocrypha has 183 chapters, 6081 verses, and 152,185 words. The middle chapter and the least in the bible is the 117th psalm : the middle verse is the 8th of the 118th psalm : the middle line is in the second book of the Chronicles, 4th chapter, 16th verse. The word 'and' occurs in the Old Testament 35,535 times, and in the New Testament 10,684 times ; the word Jehovah occurs 6,855 times.

In the Old Testament the middle book is Proverbs : the middle chapter the 29th of Job : the middle verse is in the 2nd book of Chronicles, 20th chapter and verse : the least verse is the 1st verse, 1st chapter of the 1st book of Chronicles.

In the New Testament the middle book is the Thessalonians : the middle chapter is between the 13th and 14th of the Romans : the middle verse is the 17th of the 17th chapter of the Acts : the least verse is the 35th of the 11th chapter of the gospel by St. John.

The 21st verse of the 7th chapter of Ezra has all the letters of the alphabet in it.

The 19th chapter of the 2nd book of Kings and the 37th chapter of Isaiah are alike.

The book of Esther has 10 chapters ; but neither the words Lord or God occur in it.

The authenticity of the 7th verse of the 7th chapter of St. John's epistle has been much disputed, from its not being noticed by Erasmus.

BIBLE SOCIETY. It is a singular fact that the first society for the distribution of bibles among the poor was established by some Roman-catholic prelates in France in 1774.

BIBLIOMANCY—a kind of divination by the bible, by consulting the passage that first presented itself to the eye on opening the book, was introduced into the church in the

third century, and frequently used in the consecration of bishops: it was, however, forbidden by the Council of Vennes in 465, and by an edict of Charlemagne in 793: yet this superstitious custom exists in many places to this day, and is much practised by the Mahometans with their Koran.

BIGOT. Camden says this word was introduced by the Normans, and had its origin in the marriage of Duke Rollo, who on receiving Giffa, the daughter of King Charles in marriage, and with her the investiture of the dukedom, refused to kiss the king's foot in token of subjection unless he would hold it out for that purpose, and being urged to it by those present, answered hastily, No, by God! whereupon the king turning about called him bigot, which name passed from him to his people.

BILLS OF EXCHANGE. This kind of negotiable security for money originated with the Jews, who, being banished France for some enormous crimes charged upon them, returned into Lombardy about the twelfth century, and found means to withdraw their effects, which they had lodged in the hands of friends, by *secret letters* and *bills* conceived in short precise terms, like the modern bills of exchange, and this by the assistance of merchants and travellers. The faction also of the Gibellines, on being expelled Italy by the Guelphs, adopted the same means for the recovery of their effects in Italy as the Jews had done—hence the Dutch merchants took the hint of negotiating bills of exchange, and soon spread the practice throughout Europe.

Bills of exchange are first mentioned as being negotiated at Hamburgh in 1188: they were in use in England in 1307; for we find in the 2nd vol. of the *Fœdera* that the Pope, having collected much money in England by the tenths, &c., Edward I. ordered that neither the English coin nor silver in mass, nor in bullion, should be carried out of the kingdom to

the Pope, but that the sums so raised should be delivered to merchants in England, to be remitted to the Pope by way of exchange—however, it appears that, in general, bills of exchange were then considered illegal, unless the king's licence had been previously obtained. By an ordinance passed at Barcelona in 1394, bills of exchange were directed to be accepted within twenty-four hours after they were presented. In 1404 bills were drawn in *duplicate* and *protested* on non-acceptance. *Inland bills of exchange* were not common in England before the reign of Charles II. *Promissory notes* came into use in the reign of William and Mary.

BILLS OF MORTALITY. It is said that a registry of births, marriages, and deaths, was first ordered to be inserted in the parish books in 1530 by that great, but unfortunate person, Thomas Cromwell, earl of Essex, while he was vicar-general to Hen. VIII.: and that this practice was continued in the reigns of Edward VI. and Eliz. It was afterwards discontinued in London, but resumed in 1603, after the great plague of that year, and has ever since been continued weekly by the company of parish clerks—though others date the recommencement from December, 1592. The London bills of mortality embrace ninety-seven parishes within the walls of the city—seventeen parishes without the walls—twenty-four out-parishes in Middlesex and Surrey—and ten in the city and liberties of Westminster: in all one hundred and forty-eight parishes. The bills of mortality in London, on the present plan, were first published in 1723. The first bills containing the *ages* of the dead were those for the town of Breslau, in Silesia, from which calculations on the probable duration of human life were made, and published by Dr. Halley, and thus by establishing data for the foundation of *life-assurance companies*, first gave rise to that method of securing a provision for children after death.

BILLIARDS. This game was invented by the French in 1578 ; and licensed tables were kept in Holland by the Lombards. Strutt says that at the commencement of the last century the table was square, having only three pockets and an ivory arch in the middle, through which the balls were driven. The oblong table with six pockets is modern ; maces only till lately were used ; the cue was introduced about forty years ago, but its powers have only been ascertained within the last twenty years.

BISHOP. The first bishops were appointed by the Apostles : thus James was made bishop of Jerusalem, and Titus, bishop of Crete, by St. Paul, and Polycarp, bishop of Smyrna, by St. John. Afterwards they were chosen by the Presbyters and congregations at large, till they were deprived of this right by the Council of Avignon, in the year 1050, from which time the bishops themselves have assumed the power of election.

This ecclesiastical dignity had its origin in this country in the year 185, when Lucius, king of Britain, sent Elwin and Medwin ambassadors to Eleutherius, bishop of Rome, for religious advice, and these being baptized and consecrated bishops, were sent back to their own country ; some affirm there were British bishops at the Council of Nice, A. D. 325, which are supposed to have been those of London, York and Caerleon.

The bishops of England are all barons, and that in a three-fold manner ; *feudal*, in regard of the lands and baronies annexed to their bishoprics ; by *writ*, as being summoned by writ to Parliament ; and also by *patent* and *creation*. When William the conqueror thought proper to change the spiritual tenure of frank-almoign, or free alms, under which the bishops held their lands during the Saxon Government, into the feudal or Norman tenure by barony ; their estates were subjected to all civil charges and assessments from which they were before exempt : and in right of succession to those

baronies, which were unalienable from their respective dignities, the bishops and abbots were allowed their seats in the house of lords, and distinguished under the name of Lords Spiritual; but not being ennobled in blood, they have no right to be tried as Peers, nor since the year 1388, have they been permitted to give judgment in capital offences: it being determined in the Earl of Danby's case, May, 1679, "that the Lords Spiritual have a right to stay and sit in court in capital cases, till the court proceeds to the vote of guilty or not." This resolution, however, extends only to trials in full parliament; for to the court of the Lord High Steward, in which no vote can be given but merely that of guilty, or not guilty, no bishop, as such, ever was or could be summoned.

During the Saxon times the right of appointing to bishoprics was invested in the crown, and was performed by the princes delivering to the prelate a ring, and pastoral staff or crosier: but as Gregory VII., about the close of the eleventh century, pretended that these symbols conferred a spiritual jurisdiction, the Kings of France and England consented to alter the form of investiture in their kingdoms, and receive only homage from the bishops for their temporalities; and afterwards John ceded to the monasteries and cathedrals the right of electing their prelates, whether abbots or bishops. But the ancient right of appointment was in effect restored to the crown in 1533, and now, the King on being certified of the death of a bishop by the dean and chapter, issues his *congé d'elire*, or permission for them to elect another, nominating however the person whom he would have chosen, and which they are obliged to comply with; no one however is eligible to this dignity, unless he should have attained the age of thirty years.

There are twenty-four bishoprics in England and Wales, of which the following twenty-one are under the jurisdiction of the Archbishop of Canterbury.

1. *St. Asaph*, founded about the year 560, Kentigern being the first bishop, his disciple St. Asaph was the second ; this diocese has but one archdeacon.

2. *Bangor*. This diocese, of which St. Daniel was the first bishop, in 516, is divided into the three archdeaconries of Bangor, Anglesea, and Merioneth.

3. *Bath and Wells*, divided also into the three archdeaconries of Bath, Wells and Taunton; the bishopric of Wells is stated to have been founded in 607, yet Aldelm, according to Tindal, was its first bishop in 709. Bath was added to it in 1068. Joannes de Villula being appointed the first bishop of Bath and Wells.

4. *Bristol*. This bishopric was founded by Henry VIII., and taken out of the dioceses of Salisbury, Wells and Worcester ; it has but one archdeacon, that of Dorset ; Paul Brush was the first bishop in 1542.

5. *Chichester*. This see was anciently in the *Ile of Selsey*, Wilfrede being its first bishop in 686 : when Stigand was made bishop, in 1070, he removed the see to Chichester ; it has two archdeacons, viz. Chichester and Lewes.

6. *Coventry*. This see was originally fixed at *Litchfield*, of which Dwina was appointed first bishop, in 657 : Peter its thirty-fourth bishop, in the year 1067, removed the see to Chester, and his successor, Robert de Limsey, in 1086, to Coventry. The diocese is divided into the four archdeaconries of Coventry, Stafford, Derby and Salop.

7. *St. David's*, founded by St. Dubritius in 519, who was succeeded by St. David : this diocese assumed archiepiscopal authority from its foundation to the year 1115, when Bernard, who was the forty-eighth archbishop, and chancellor to Queen Adelise, submitted himself and church to the see of Canterbury : it comprehends the four archdeaconries of Caerdigan, Caermarthen, Brecknock, and St. David's.

8. *Ely*. This diocese was taken from that of Lincoln by Henry I., in 1109. Harvey, bishop of Bangor,

being removed to this see; it has one archdeacon, that of Ely.

9. *Exeter*. When Christianity was first planted in the West of England, the counties of Cornwall and Devon were placed under the see of *Dorchester*, of which Birinus was the first bishop in 636; and on the removal of that episcopal seat to *Winchester* by Birinus, it still retained jurisdiction over them. About the year 706, the monastery of Sherborne being converted into a cathedral, the counties of Cornwall and Devon were separated from the diocese of Winchester and annexed to that of Sherborne, and the celebrated Aldhelm, abbot of Malmesbury, was promoted by Ina to the bishopric. In the commencement of the tenth century, Phlegmund, archbishop of Canterbury, at the command of Edward the Elder, created three new bishoprics in lieu of the diocese of Sherborne, viz. one at *Wells* for Somersetshire; another at *Bedmin* or *Padstow*, for Cornwall: and the third at *Taunton-bishops*, afterwards removed to *Crediton*, for Devonshire. About the year 1032 Liwring, the twelfth bishop of Devon, procured the bishopric of Cornwall to be annexed to his own; and his successor, Leofric, (probably St. Lanfranc, afterwards archbishop of Canterbury) removed the see from Crediton to *Exeter*, about the year 1050, and was made the first bishop of Exeter: this diocese comprehends the four archdeaconries of Exeter, Barnstaple, Totness and Cornwall.

10. *Gloucester*. In the year 657, Edwy, king of Northumberland, having subdued Mercia, erected Litchfield into a bishop's see, and included Gloucestershire within its diocese. This bishopric was soon afterwards divided into the five smaller ones of Litchfield, Dorchester, Leicester, Hereford, and Worcester; to the last of which Gloucester was annexed and continued subject, till the reign of Hen. VIII., who, in 1541, erected the city of Gloucester into a bishopric; the abbey church being converted into a cathedral, and John

Wakeman, abbot of Tewkesbury, being elected bishop : this see has but one archdeacon, that of Gloucester.

11. *Hereford*. Putta is described as the first bishop of Hereford in 676 : the diocese contains the two archdeaconries of Hereford and Salop.

12. *Llandaff*. It is stated that a cathedral church was founded here in 186, soon after the introduction of christianity into Britain ; it was not, however, till the beginning of the sixth century, that Llandaff was raised to the dignity of a bishop's see, by Myric, king of the Silures, St. Debitrius being its first bishop : this diocese has one archdeacon :

13. *Lincoln*. This diocese was originally included in the sees of Dorchester and *Sidnacester*, a depopulated place near Gainsborough or Stow, and which see, together with a considerable portion of the diocese of Dorchester, about the year 737, formed the new bishopric of *Leicester*. On the death of Wielfin, the twenty-first bishop of Leicester, which happened about the year 1067, his successor, Remigius, removed the see to *Lincoln*, of which he became the first bishop : it contains the six archdeaconries of Lincoln, Leicester, Stow, Bedford, Huntingdon, and Buckingham, and formerly comprehended the dioceses of Ely, Peterborough, and Oxford.

14. *London*. Lucius is reported to have founded this bishopric in 185 ; Miletus, however, in the commencement of the seventh century, is the first bishop that is mentioned ; a cathedral church having been erected in 610, on the site of the present St. Paul's. The see of *Westminster*, which never had but one bishop, was united to that of London, in 1550 : this diocese contains the five archdeaconries of London, Middlesex, Essex, Colchester and St. Albans.

15. *Norwich*. This was originally called the bishopric of the *East Angles*, of which St. Felix was appointed bishop in 630. Bissus, the fourth bishop, in 670, divided the diocese into the two bishoprics of *Elmham* and *Dunwich* ; which were

united in 955, by Athul, bishop of Dunwich. About the year 1070 the see was removed to *Thelford*, and in 1091 to *Norwich*. The diocese comprehends the four archdeaconries of Norfolk, Norwich, Suffolk and Sudbury.

16. *Oxford* was part of the diocese of Lincoln till 1542, when Henry VIII. erected it into a distinct bishopric, and Robert King, the last Abbot of Osney, was appointed bishop : this see has but one archdeacon, that of Oxford.

17. *Peterborough* was taken from the diocese of Lincoln by Henry VIII., in 1541, and converted into a bishopric. John Chambers, the last abbot of Peterborough, being nominated bishop. The see has but one arch-deaconry, namely, that of Northampton.

18. *Rochester*. This diocese, the least in England, was founded by St. Justus in 604, though in the following year he was obliged to quit the see, on account of the apostacy of the inhabitants.

19. *Salisbury*. Soon after the separation of the sees of Wells and Exeter from Sherborne, it appears there was another bishopric established at *Wilton*, whose seat was sometimes there, and at other times at *Ramsbury* and *Sunning*. On the death of Elfwold, the twenty-fifth bishop of Sherborne, Herman, who was the eleventh bishop of Wilton, was also elected bishop of Sherborne ; and the bishoprics being thus united, the episcopal chair was removed to Sarum, and Herman and his successors were afterwards entitled bishops of Salisbury.

20. *Winchester*. About the year 634, Birinus being deputed by Pope Honorius to preach the gospel in those parts of Britain still involved in paganism, prevailed on King Kene-gils to found a cathedral at Winchester, and nominate him bishop thereof. This diocese contains the two archdeaconries of Winchester and Surrey.

21. *Worcester*. This diocese was founded by Ethelred, king of Mercia, about 690. Tatfrith being the first bishop,

but dying before consecration, Basil was appointed to the episcopal chair.

The province of York comprehends the archbishopric of York, and the bishoprics of Carlisle, Chester, and Durham, as also the ancient bishopric of Hexham, founded in 678. The Diocese is divided into the four archdeaconries of York, East Riding, Cleveland, and Nottingham. Paulinus was consecrated the first archbishop of York in 635.

Carlisle. This see was originally an appendage to that of Lindisfarn, an island on the coast of Northumberland, of which the celebrated St. Cuthbert was bishop in 686, and so continued till the year 1133, when Henry I. constituted it a separate bishopric, appointing Ethelwolfe to the chair. It has but one archdeacon, that of Carlisle.

Chester. This bishopric was anciently part of the diocese of Litchfield; but the seat being removed hither in 1075, though but for a very short period, the bishops of Litchfield became to be often called bishops of Chester: however, it was not formed into a distinct bishopric till after the suppression of the monasteries by Henry VIII., when the abbey of St. Warburgh was converted into a cathedral. The diocese is divided into two the archdeaconries of Chester and Richmond.

Durham. This see is indebted for its wealth and importance to St. Cuthbert, bishop of Lindisfarn, styled the apostle of the North, to whom Egfrid, king of Northumbria, in 685, granted all the lands between the rivers Weare and Tyne, from which time the county was invested with great privileges, and has been generally termed the *bishopric* and *County Palatine*. On the invasion and ravages by the Danes, of the island of Lindisfarn, about the close of the ninth century, the inhabitants determined upon abandoning it; and having collected what was valuable, and especially the remains of St. Cuthbert, they, after a long series of temporary residences, about the year 1040, fixed upon Dunholme, or Durham, for the lasting abode of St. Cuthbert's relics; and this bishopric

therefore dates its establishment from that period. The diocese contains the archdeaconries of Durham and Northumberland.

Man. The bishopric of this Island was founded by St. Patrick, about the close of the fourth century, and as it had jurisdiction over the Hebrides or Western Islands of Scotland, called Sodorenses, from *Sodor*, a village in Iona, it formed the united bishopric of Sodor and Man; but when the Island of Man became subject to the crown of England, the Western Isles which were attached to Scotland, chose a bishop of their own. In the year 1405, Henry IV. gave the island to Sir John Stanley, whose posterity, earls of Derby, have ever since enjoyed the patronage of nominating the bishop: he is consecrated by the archbishop of York; but the see not being baronial, he is not entitled to vote in the House of Lords, though Wood supposes he has, by courtesy, a seat above the bar.

The three colonial bishoprics of Canada, Calcutta, and Jamaica are under the jurisdiction of the bishop of London.

BISHOP-BOY. It was an ancient custom in such churches as had cathedral service, for the little choristers on Saint Nicholas day, Dec. 6, to elect one of their number to preside over the rest, with some degree of episcopal authority, until the 28th of December, or Innocent's day; which custom probably originated with the ancient plays or mysteries. In the wardrobe account of Edward I., in 1290, mention is made of a boy-bishop saying vespers before the king in his chapel at Heton, near Newcastle. In 1554 Mary issued an edict to all the clergy to have a boy-bishop in procession; and it was not till the reign of Elizabeth that the custom was abolished. In the cathedral church of Salisbury is the monument of a boy-bishop, who died in the exercise of his pontifical office, and whose funeral exequies were solemnized with the same pomp and ceremony as was customary on the death of a bishop.

BISMUTH. This metal, it is supposed, was known to the ancients, to the alchemists, and some of the earliest miners, but considered by them merely as a variety of some other metal, and generally of tin and lead. It was not till the year 1753, when its properties were particularly examined by Pott and other chemists, that it was ascertained to be a peculiar metal.

BISSEXTILE or Leap Year, so named because Cæsar in his reformation of the calendar appointed an additional day in every fourth year immediately to precede the sixth of the calends of March, and therefore, on account of that day being twice reckoned, this year was called the bis-sextile year. This double day is noticed in the time of Henry III., when, to prevent misunderstandings, the intercalary day, and that next before it, were ordered to be accounted as one day.

BLANKET. This necessary piece of bed furniture is so called from one Thomas Blanket, who in the year 1340 set up looms at Bristol for weaving them. The ancients used sheepskins with the wool on, as also did the Anglo-Saxons, which they called bed-felts, that is, bed-skins.

The ludicrous punishment of tossing in a blanket is alluded to by the Romans under the denomination *sagatio*, and is described graphically enough by Martial—

Ibis ab excusso, missus ad astra, sago.

It is said that the emperor Otho was accustomed to stroll out in dark nights, and when he met with an helpless or drunken man to give him the discipline of the blanket.

BLINDMAN'S BUFF—was an amusement among the Greeks.

BLEACHING. The origin of this art, like that of many others which are subservient to the comforts or conveniences of man, is involved in obscurity. The effects of the sun and

air in whitening garments and in discharging the less permanent colours imprinted by the dyer, must have been early observed by the ancients : we know that the Egyptians, to promote this effect, were accustomed to use certain kinds of clay ; and Pliny states that a plant, to which he gives the name *radicula*, probably soap wort, was used by the Romans for the scouring and bleaching of wool. The art of bleaching was scarcely known in England about eighty years ago, it being the custom to send all the manufactured brown linen to Holland for that purpose. The application of the oxygenated muriatic acid to the purposes of bleaching was discovered by Bartholet in 1785 ; and in 1788 the establishment of a large bleaching concern on this principle was commenced upon at Bolton in Lancashire.

BLEEDING. The hippopotamus, according to Pliny, first taught men the use of bleeding. He states that the animal being overcharged with blood, rubs itself against a pointed bulrush ; a vein is opened ; and when a sufficient quantity of blood has been discharged, rolls himself in the mire to stop the bleeding. This art is however very ancient, and appears to have been resorted to among the Egyptians, Assyrians, Scythians, &c., at a time when anatomy had never been cultivated. The Greeks boast that Podalirius, the son of Esculapius, soon after the siege of Troy, was the first who inculcated the expediency of bleeding.

BLOCK, or Pulley. This useful machine was invented by Archimedes, and is the *malum ligneum* of the Romans. One with two ropes appears on the triumphal arch erected by the Romans in the ancient city of Orange.

BLOOD. The *circulation* of the blood, by which that fluid is alternately conveyed from the heart to all parts of the body, is said by Janson Almalovean to have been known to

Hippocrates: others attribute the discovery to Michael Servetus, a French physician, in 1553: but the most general opinion is that the merit is due to Hervey, an English physician, in the year 1628.

The first who tried the experiment of *transferring the blood* of one animal into the vascular system of another by means of a tube connected with the vein of the receiving animal, and an artery in the other, was Clark in the year 1657, who failed in his attempts. Lower in 1665 tried the experiment on dogs with success, as did Cox on pigeons; and various experiments were exhibited before the Royal Society. In France the blood of a sheep was transferred into the veins of an idiotic youth; and Lower in England practised the same on a literary man, who offered himself for the experiment: however, no positive benefit resulting from these transfusions, the practice was prohibited by the parliament of Paris, and fell into disuse in England.

BLOW-PIPE. The origin of this useful invention must, from its simplicity, be very ancient: it seems to have been employed by glass-blowers, enamellers, and jewellers, long before it was used as an article of chemical apparatus. Dr. Hase, of Philadelphia, was the first who by his blow-pipe combined the oxygen and hydrogen gasses, thereby producing a greater heat than had ever been obtained before, except by the concentration of the sun's rays by large and powerful lenses.

BLUE. It has been alleged that the ancients were acquainted with that beautiful colour, the Prussian blue, which they made use of for the purpose of painting: but Landriani has shewn, in his dissertation on this substance, from the evidence of Theophrastus and Pliny, and from the analysis of an Egyptian mummy, that the ancients employed ultra marine blue, and the smalt or azure of cobalt; and that Prussian

blue, which is readily acted upon by the substances to which it must have been exposed in those countries, could not resist their influence for so many ages, and retain the beautiful colours which are admired in the paintings of Herculaneum. The discovery of Prussian blue, according to Stahl, was accidental; he states that about the commencement of the last century Diesbach, a chemist of Berlin, wishing to precipitate a decoction of cochineal with an alkali, borrowed some potash from Dippel, a brother chemist, on which he had several times distilled his animal oil, but as there was some sulphate of iron in the decoction of cochineal, the liquor instantly exhibited a beautiful blue in the stead of a red precipitate; reflecting on the circumstances which had taken place, he discovered the cause of it, and thus found himself capable of producing at pleasure the same substance, which afterwards became an object of commerce, and the preparation of which he kept for a long time secret. It obtained the name of Prussian blue, from the kingdom in which it was discovered. This colour was sold at a great price, and consequently became the subject of research with other chemists; at length Dr. Woodward got some information of its preparation from Germany, and published an account of the process in 1724, in which he was followed by Scheele in 1782.

Blue, says Pliny, was the colour in which the Gauls clothed their slaves, and for many ages blue coats were worn by servants and apprentices among the Saxons; from hence we have *blue coat boys*, *blue schools*, &c.

BOAR. The whole boar, and boar's heads ornamented, were favorite dishes in the Norman æra, and were served up with considerable ceremony, music, &c.

BOATS for the preservation of Lives. It is a singular circumstance that no attempt was made to construct a life-

boat, or any other machine for the same purpose, until the year 1789, when owing to a calamitous and heart-rending shipwreck which took place on the Hind Sand, in Tynemouth Haven, in the sight of thousands of spectators, the gentry of South Shields formed themselves into a committee, and offered premiums for the best plan of a boat calculated to overcome the dangers of a heavy broken sea; various plans being submitted to the committee, a preference was unanimously given to Mr. Greathead's, and a boat built according to his suggestion, was launched on the 30th of January, 1790, and so well has it answered, that in Tyne alone, many hundreds of lives have been saved by it, and in no instance has it failed.

BOATSWAIN. This officer is noticed in the time of the Anglo-Saxons: he is described as having a staff to direct the rowers.

BOH. This word, which is frequently used to terrify children, according to the author of the Popular Antiquities, is the name of Boh, a great general, the son of Odin.

BOILERS, with cocks, as commonly used in our kitchens, were discovered at Herculaneum.

BOMB. Blondell asserts that this species of artillery was first made use of at the siege of Watchtendonch, in Guelderland, in 1588; though others pretend that bombs were employed at the siege of Naples, by Charles VIII. in 1495, at which time they were made of brass and opened on hinges; they were in common use among the Dutch and Spanish armies in 1634, and soon became general throughout Europe.

BOMB-BOATS, or ships for throwing bombs, were invented by M. Reyneau, and first used at the bombardment

of Algiers in 1681, till which time it had been judged impracticable to bombard a place from the sea.

BOMBAZINE. This word is derived from *Bombycina*, a kind of silk-dress, which the Romans obtained from Assyria, and conceived it to be the production of an insect of the moth kind, called *bombyx*, which most probably was the silk-worm; *bombax* was also the name given to the common cotton tree by the Arabs, and adopted by the Greeks, however it is supposed that the bombazine was originally fabricated wholly of silk, but that on account of the preciousness of that material it became a practice to ravel or unweave such silken stuffs, and to employ both the warp and the shoot or the warp of mixed stuffs, and that these stuffs with silken warps and woollen or cotton shoots were called *bombazines*, after the name of the parent article; and might be invented as Pliny asserts, by a lady named Pamphila, in Coos, an island in the Archipelago; this kind of silk stuff was manufactured at Milan, in the thirteenth century. In the year 1675, the Dutch refugees who fled from the persecution of Philip II., introduced the manufacture of bombazine into Norwich, and presented several pieces of it to the court then held in that city.

BONFIRE. Mahudel in his dissertation on the origin of bonfires, endeavours to prove that they were unknown to the ancients, and consequently are of modern date. He does not indeed deny that the ancients made use of large fires on occasion of public rejoicings, as a victory obtained, or on the conclusion of a peace, &c.; but according to him the fire was solely to burn the victims or incense, and as these sacrifices were mostly offered in the night time, the illuminations were only intended to afford light to perform the ceremonies. In this country bonfires were originally made to drive away evil spirits, and are first noticed as used for

bard" is this entry: "This book of the Sentences belongs to Master Robert, archdeacon of Lincoln, which he bought of Geoffry, the chaplain, brother of Henry, the vicar of North Elkington, in the presence of Master Robert de Lee; Master John, of Larling; Richard of Luda, clerk; Richard, the almoner; the said Henry, the vicar; and his clerk and others: and the said archdeacon gave the said book to God and St. Oswald, and to Peter, abbot of Barton, and the convent of Barden." The value of an early printed book may be discovered from the following circumstance: in January 1812, the Decameron of Boccaccio, printed in 1471, was purchased at the Duke of Roxburgh's sale by the Marquis of Blandford for £2260.

The famous library established in the University of Oxford by that munificent patron of literature, Humphrey, Duke of Gloucester, contained only 600 volumes.

The first book ever printed was the Vulgate Bible in two volumes, folio, in the year 1462; the second book was Cicero de Officiis, in 1466. The first book in the English language was the Recuyel of the history of Troy, printed at Cologne, Sept. 19, 1471, and the first book printed in England was a small Latin volume, called the "Exposition of St. Jerome," from the Oxford Press, dated 17th Dec. 1468. And the first in the English language was on the game of chess in 1474. The first book printed in the French language was Le Jardin de Devotion in 1473. The earliest printed books have only impressions on one side the leaf, the other being blank.

The earliest instance of a *title-page* in this country is noticed in the work of "Bartholomeus de Proprietatibus Rerum," printed by Wynkin about 1495. The earliest instance of *figures* placed beneath the title of the book occurs in the "Crafte to lyve well and dye well," printed in 1505. The end of a book was sometimes marked with feliciter instead of finis, and with a < called coronis, and the whole frequently washed with an oil extracted from cedar, or citron

chips strewed between the leaves to preserve it from rotting.

One of the scarcest printed books in the world is entitled "*Prieres et Meditations par Antoine Godeau*," Paris, 1643 : it was printed in a peculiar form for the use of Ann of Austria, queen of France, and the royal family, and only six copies were struck off.

The *burning* of books was a kind of punishment, sanctioned both among the Greeks and Romans by legal sentence thus the works of Protagoras were burned by the common crier at Athens ; and the library preserved in the temple of Jerusalem burnt by order of Antiochus. In the reign of Augustus the satirical books of Labianus, were directed to be burnt, which occasioned his death through grief. The book of Sports, which permitted innocent recreations after evening prayer on Sundays, and published by authority in 1617, was ordered by the puritanical Parliament in 1643 to be burnt by the common hangman.

Catalogues of books were first printed in 1554 for the use of the book-fairs at Frankfort, held in a street called Book-street : these fairs were afterwards removed to Leipsic, and thither booksellers from all parts of the civilized world resorted.

Book censors were established in France so early as 1450.

Book-binding. According to Olympiodorus, one Phillatius, a learned man at Athens, was the first who taught the use of a kind of glue to fasten the several leaves of a book together, on which account a statue was erected to him. In the middle ages, book-binding was the common employment of the monks. The most usual binding was a rough white sheep-skin pasted on a wooden board, sometimes ornamented with gold and jewels, and even solid silver gilt ; there were also trading binders, called *ligatores*, and those who sold the covers *scrutarii* : the envelopes of the classical rolls or volumina were sometimes coloured to agree with the subject, thus, that of the *Iliad*, as relating to war, was red ; of the

Odyssey, from the voyage, blue : the classical law books, because the titles were in red letters, were called *libri rubricati*, hence the French denomination, *les rubriques*, and our *rubric*, as applied to prayer-books.

The first *book-case* noticed in our history was the one given by the celebrated Earl Godwin to the monks of Worcester.

The first instance of an exclusive right to the sole printing and publishing of a book, is noticed in the 16th vol. of the *Fœdera*, 1591, being a patent granted by Queen Elizabeth to Richard Wright of Oxford, to publish a translation of Cornelius Tacitus into English, forbidding any one to print the same during his life, or to import any English translation of it from beyond sea.

BOOK-KEEPING. The method of recording the pecuniary transactions of merchants by the system of *double entry* is supposed to have originated at Venice in the fifteenth century; the first treatise on the subject was written by *Buccio de Burgo* about the year 1495, and the method appears to have been adopted in our mercantile houses about the close of the sixteenth century.

BOOK-SELLERS were by the ancients named *bibliopollæ*, their office being distinct from that of the *librarii*. Petty dealers or vendors of small ware were distinguished by the distinctive appellation of *libelliones*. At Rome the *argiletum* was the mart for books, as Paternoster-row was considered, in London. Formerly the offices of book-sellers and printers were united in the same persons.

BOOTS. The Romans had leather spatterdashes, having buttons on the sides, and probably introduced the practice of wearing them into this country, as they were common among the Anglo-Saxons, being worn by persons of all ranks and conditions, as well clergy as laity. Robert, the eldest son of

William the Conqueror, had the surname of *certs oetes* or short boots. Till about the commencement of the sixteenth century the boots used on horseback were called *oes*. The word boot Borel derives from the ancient French word *bot*, a stamp; or rather from *bout*, a large leathern bottle, which it resembled.

Boots were anciently pulled off by the servants—whence *boot-jack*.

BORAX. The ancients were acquainted with this bitumen, and employed it for several purposes under the name *chryse-cella*; and although it was the subject of research among the earlier chemists, yet nothing was known of its nature and composition till the beginning of the eighteenth century. The purification of the borax was first discovered by the Venetians, and afterwards by the Dutch: it is practised by some English chemists, but the process is kept secret.

BOROUGHs first sent representatives to Parliament in 1265.

BOTANY. A general acquaintance with the medicinal virtues of plants seems to have been very early acquired. In Homer we find Patroclus staunching the bleeding wound of Euryalus with the juice of a bitter root; and Nestor, it is said, "knew the virtues of each earth-born herb;" Solomon also is celebrated for his knowledge of plants, "from the cedar of Lebanon to the hyasop that groweth on the wall;" however, the first professed writer on plants was Theophrastus, the disciple of Aristotle, in the third century before the Christian era, who published a history of plants, distributing them into various classes. Dioscorides, about 400 years after Theophrastus, pursued the same subject, and he was followed by Pliny the elder. After the revival of letters, Boeker Tragus, a German, published a history of plants in

1532, and was succeeded by several writers of note, till at length Linnæus, by his plan of sexual classification, published in 1736, became the founder of the present system of botany.

Padua has the credit of having established the first botanical garden in 1583.

BOTANY-BAY. Convicts were first transported to New South Wales in March 1787; some say for the purpose of cultivating the New Zealand flax plant, which, however, has since been found to be an indigenous plant of the south of Ireland, and to grow there luxuriantly.

BOTTLES. We have no mention of bottles being made of glass prior to the fifteenth century, before which time they were generally made either of leather, or metal, or baked earth. A large glass bottle was blown at Leith, in Scotland, in 1748, which was capable of containing two hogsheads of liquor, its dimensions being forty-two by forty inches.

BOW, (*See Archery.*)

BOW DYE, a beautiful scarlet, so called from its having been manufactured at the village of Bow, near London, where dye-houses were first erected by Kepler, a Fleming, in 1643.

BOWLS. The amusement of bowling was practised in the thirteenth century; and *bowling greens* are said to have originated in England, and to be equally ancient.

BOX. The Romans introduced this tree into England, and from its wood our trenchers or plates were originally made.

BOXING or Pugilism, is frequently alluded to in the

Greek and Latin authors, being an exercise in use in the heroic times, before the invention of weapons. Thus Homer gives an account of the combat between Epeus and Eurialus, and Virgil that between Dares and Entellus. The art has in modern times been almost appropriated by the English. George Taylor, about the year 1730, first established a booth for the exhibition of this species of amusement, and was followed by Broughton in 1742, who erected an amphitheatre for that purpose near Oxford-street, which was patronised by many of the nobility and gentry.

BRACELET. This ornament is of great antiquity; we find the servant of Abraham presenting to Rebekah two bracelets for her hands, each of which weighed ten shekels of gold; it was also frequently worn by the men, and considered an ensign of royalty: thus mention is made of the Amalekite's bringing the bracelet which he found on Saul's arm, together with his crown to David. Golden bands worn round the neck, arms, and knees, were the emblems of supreme authority among the British kings. In the early Anglo-Saxon æra bracelets were confined to persons of distinction; bracelets of hair in the middle ages were given by lovers to their mistresses.

BRANDY. From the writings of Arnold de Villa Nova, it would seem that the Arabian physicians made use of brandy under the name of *vinum ustum*, in the composition of their medicines; but the method of preparing it was tedious and difficult, and carefully concealed by the chemists. Alexander Tassoni relates that the Modenese were the first who in Europe, on occasion of too abundant a vintage, made and sold brandy in considerable quantities, and that the great demand for this liquor soon induced the Venetians, about the middle of the fifteenth century, to participate in this new lucrative branch of commerce, though still under the deno-

mination of burnt wine. According to Baccius brandy was sold in Italy, under the name of *aqua vitæ*, about the middle of the sixteenth century, and was recommended by the medical writers of those days, as a preservative against most diseases, and a means of prolonging youth and beauty. In the year 1583, the sale of it was prohibited at Frankfort on the Mayne, it having been represented by the barber-surgeons as dangerous in the then prevalent diseases. The word itself *brandy wine* originated with the Dutch, and is first noticed in 1671, though for a long time afterwards it was sold by the apothecaries under the appellation of *aqua vitæ*.

BRASIERS, of bronze and of elegant workmanship, similar to those now used in Italy, were discovered in the ruins of Herculaneum ; this ancient mode of warming rooms was practised in this country till the general introduction of coal.

BRASS. The use of brass is of very considerable antiquity, but from the inaccurate descriptions of the ancients, and their ignorance of the true nature of zinc and its ores, much uncertainty prevails on this subject. Most of the genuine relics of antiquity of this kind, are composed of various mixtures of brass, with tin and other metals, and are rather to be termed *bronzes*. Aristotle says, that brass was made with a kind of earth, called *cadmia* by the Greeks, from Cadmus who first taught the method of impregnating the copper with it. According to Pliny, the Corinthian brass was an accidental mixture of metals at the sack and conflagration of Corinth by L. Mummius, 146 B. C., when the gold, silver, and brass statues, and all metallic substances melting and mingling together formed this mass ; he also states, there were three sorts of Corinthian brass, the red, the white, and that which was of the colour of money, according to the different proportions of gold and silver that were in it : this however, is by many considered as a fabu-

lous account, and merely intended to signify that the art of making copper into brass was first discovered by the Corinthians, who found the calamine stone on the plains of Peloponnesus, or at least that they brought this art to perfection. The Romans, for a long time, included copper and brass under the general name of *æs*, considering the latter as the most valuable: and it was not till a late period, that metallurgists in order to distinguish them, gave the name of *cuprum* to the former.

About the decline of the Roman Empire the art of manufacturing brass seems to have been lost, and is not noticed till the thirteenth century, when Albertus Magnus discovered that yellow copper was made by the addition of the lapis calaminaris; little notice however was taken of this discovery till about the year 1550, when Duke Julius in his endeavours to make gold, first brought the brass works at Burtheim, near Hartzburg, into considerable reputation.

The ancient Britons, were acquainted from the remotest periods with the use of both copper and brass, and had even brass foundries established among them, by which they minted money, and fabricated weapons of war; yet until the arrival of the Romans they seem to have been ignorant that either veins of copper or calamine were to be met with in their own country; the use of calamine is first noticed in England in the reign of Elizabeth, who in 1563 granted a patent for its being applied to the purpose of manufacturing latten or brass; though so late as the commencement of the eighteenth century, calamine was considered of so little value, as to be frequently carried out of the kingdom as ballast by the ships which traded to Holland.

BREAKWATER, a pier or artificial bank, built in the sea, for the purpose of breaking the force of the waves, and forming a safe roadstead or harbour, was first constructed by

the French at Cherburgh, in 1780; the Breakwater at Plymouth was commenced upon in 1812.

BREECHES. Strutt thinks this part of our dress originated from the drawers still worn by the Asiatics; we find mention made of them among the ancient Gauls and Germans; and some pretend they got a footing in Italy, in the time of Augustus: they are stated to have been so generally worn under Honorius and Arcadius, that a law was made to expel the *braccarii*, or breeches makers, out of the city; it appearing a thing unworthy that a nation which commanded the world, should wear the habit of barbarians.

Tight leather breeches were worn in the thirteenth century, and the present kind of short breeches are noticed about the close of the seventeenth century.

BREVIARY. The first time the word breviary occurs in the sense of a church book, is stated to be in a letter of the Archbishop of Lyons to the Bishop of Langres, in 1099. According to Dr Mege breviaries had their origin from the little religious books carried about by the ancient monks in their journeys, which were generally written in a short or abbreviated style, a whole period being expressed by a few syllables.

BRICKS are first noticed in the building of the Tower of Babel, "and they said one to another, go to, let us make brick and burn them thoroughly, and they had brick for stone, and lime had they for mortar." Gen. xi. v. 3. The making of bricks was also one of the oppressions to which the Israelites were subjected during their servitude in Egypt. The Greeks also used this material. The public buildings of the Romans under their first kings were usually constructed of massive square stones, which art they had acquired from the Tuscans. Sun-dried or unburnt bricks came into use

during the republican form of government, and burnt or baked bricks about the time of Cæsar; and were common under the reign of Augustus. These bricks, Pliny states, were about eighteen inches long and twelve broad, which accords very well with the dimensions of several Roman bricks discovered in England.

Though the art of making bricks was introduced into this country by the Romans, yet it seems to have been chiefly for the purpose of constructing military roads or fortifications. Alfred, it is stated, first recommended to his subjects the use of brick in the construction of their habitations. The Saxons called brick-work *tigel gewearc*, but the art seems to have been either neglected or lost till the time of Richard II.

In the reign of Henry VI. bricks were generally known under the name of wall tiles, and a number of public edifices and noblemen's houses were constructed of this material, but private brick buildings were by no means common in the time of Charles II. for it is conjectured that by far the greater number of the houses destroyed in the celebrated fire of London during his reign were built of wood. The present mode of making bricks was invented by Sir Nicholas Crisp, in the reign of Charles I., when the size was also determined upon.

BRIDGES. In the first ages bridges must have been formed by a plank of wood, or the trunk of a tree laid across a rivulet for the convenience of travellers. Some attribute the invention of them to Janus, having discovered several ancient Greek, Sicilian, and Italian coins, with Janus on one side and on the reverse a bridge. The first authentic account of a bridge in history is that of boats, constructed for the purpose of conveying the army of Darius over the Hellespont, about 330 B. C. The oldest wooden bridge at Rome was built by Ancus Martius, and was called the Pons Sublicius, it was rebuilt with stone by Æmilianus Lepidus, and some vestiges of it are still discernible at the bottom of the Aventine

mountain. Cæsar established a permanent bridge of boats over the Rhine. Although the Romans were acquainted with the construction of arches, and during the period of the Republic had enriched the city with the most splendid edifices, no attempt was made to render them applicable to bridges: for that celebrated bridge built by Apollodorus over the Danube, when Trajan was emperor, and which, considering the breadth of the river, the impetuosity of its waters, and the variation of its level, was a work not unworthy of the Roman Empire, was not built on arches, and the piers only were of stone: each pier, of which there were twenty, was formed of squared stones, and was sixty feet in breadth, and 150 feet high, they were 170 feet distant from each other, making the whole length of the bridge 4770 feet, 195 yards less than an English mile. This bridge was afterwards destroyed by Adrian, who was apprehensive lest the northern hordes should overpower the guard appointed for its protection.

In the middle ages the building of bridges was considered as a religious duty, and a regular order of hospitaliers was founded by St. Benezet, at Avignon, about the close of the twelfth century, under the denomination of Pontifices, or bridge builders, whose office it was to assist travellers by making bridges, settling ferries, and receiving strangers in hospitals, or houses built on the banks of rivers; the bridge at Avignon was built by St. Benezet, in 1176.

Bridges of wood were common in England during the Saxon Government, and were generally fortified.

The most ancient stone bridge in England is the triangular arched one at Crowland in Lincolnshire, probably intended as an emblem of the Trinity, it was erected about the year 860. Bow-bridge, near London, was built of stone in 1118.

London bridge was built of timber at the public charge in the reign of Etheldred, about the year 1000; the present

stone bridge was begun by Henry II. in 1176, and finished under John in 1209 ; the architect was Peter, a monk of Colechurch, who died before it was completed. We read of a tilt and tournament being held on it in 1395, houses were afterwards built on each side, but being found a nuisance were removed in 1758, and the two centre arches were united by removing the middle pier. The water works at London bridge were erected in 1582. The foundation stone of a new bridge, a few yards above the old one, was laid by the Lord Mayor, in 1824.

It is presumed there was a bridge across the Thames, near Westminster, previous to the year 994, as William of Malmesbury speaking of the repulse of the Danes under Sweyn and Olaf, says that "part of them were drowned in the river because, in their hasty rage, they took no heed of the bridge."

Iron bridges are the exclusive invention of British artists ; the first erected on a large scale was that over the Severn at Coalbrook Dale, by Darby, in 1779. The celebrated iron bridge at Bishop Wearmouth, near Sunderland, consisting of a single arch, whose span is 236 feet, was completed by Mr. Wilson on the 9th of August 1796.

Suspension or hanging bridges, which are sustained only at the two ends on abutments, have been used for many ages in China, and are common in mountainous countries ; the Spaniards made use of them in passing the torrents of Peru. The splendid example of the bridge at Wearmouth gave an impulse to public taste, which led to the suggestion of constructing suspension bridges of iron in this country. In Dec. 1796, James Jordan, of Oakhill, near Shepton Mallet, procured a patent for his invention of a mode for constructing bridges which should not be affected by severe frosts or violent currents ; his plan was to place *two parallel elliptic curves* across the intended site, formed of cast or wrought iron or wood, and springing from sufficient abutments, he then proposed to attach the bridge to these curves, by means

of *wrought iron suspending bars*, at any height from the water that might be required. In the drawing accompanying his description the appearance of the bridge is extremely picturesque; the road over it, as suspended by cast iron curves, forms a sort of chord to the curve line, and possesses the peculiar utility of being perfectly straight and void of that rise or crown common to other bridges.

BRIDLES. The first horsemen not being acquainted with the art of governing horses with bridles, managed them with a switch assisted with the accent of the voice. Pliny states that one Pelethronius invented the bridle and saddle, but Virgil ascribes the invention to the Lapithæ, to whom he gives the epithet *Pelethronii*, from a mountain in Thessaly named *Pelethronium*, where horses were first broken in. The ancients, as far back as any history extends, were well acquainted with the use of bits. Xenophon, more than 400 B. C., describes bits as being in common use in his time, among the Grecian states: he speaks of a smooth and a sharp kind of bit, the latter, if more severity was requisite, was to be armed with points or teeth. In some of the sculptured equestrian figures of the ancients, something like the branches of the *curb* may be found, but in no instance does there appear any thing resembling the *chain*, which is absolutely necessary to its effect; this indeed is quite a modern invention, and had its rise in Italy or France, and was introduced into the English army by a proclamation made in the third year of King Charles I. The Roman youth learned the art of riding without bridles, and hence it is that in Trajan's column, soldiers are represented in this manner riding at full speed.

BRIEF. A term applied to those papal acts which were sealed with wax; *bulls* being sealed with lead. *Briefs for charitable contributions* were first directed to be read in our

churches, in 1704. Martial in one of his epigrams alludes to a similar custom.

BRITAIN. We have no satisfactory account of this island in any work previous to that of Lecretius, written about 70 B. C. The insertion of Britain in Aristotle's history of the world is supposed to have been done by some modern editor. The trade of the Phœnicians to the western parts for tin, is not considered by the learned to be of that antiquity recorded by historians.

BROCAD or **Brocade.** This rich and valuable stuff, composed of silk interwoven with threads of gold and silver, anciently came from the east, and was manufactured at Venice in the thirteenth century. In an old inventory cited by Du Cange, we read of a clerical vestment brocaded with gold, upon a red ground, and enriched with the representation of lions and other animals.

BROKERS, (*See Pawn-brokers.*)

BROOMS, having long sticks to them, were used by the Romans : they had also bristle brushes.

BRONZE. This factitious metal was invented by the Egyptians, and is supposed to be the brass of Homer and the ancient Greeks. Statues of bronze were made so early as the sixty-third Olympiad, and were known at Rome in the time of Romulus. Most of the arms and instruments found in Herculaneum, Pompeii, Stabea, &c. were of brass or bronze. A complete set of surgical instruments of bronze were discovered at Pompeii.

BROTHER. The custom of kings giving to each other this appellation is very ancient. Cosroes, king of Persia, in

his letter to the emperor Justinian, commences thus:—Cosroes, king of Persia, &c., to the emperor Justinian. My brother, &c. The unction given at the coronation is considered as conferring a kind of brotherhood.

BUCKLES of brass, having circular rims, with a tongue, but no place for a strap, have been discovered in British barrows: some of silver for shoes occur in 1346. Howe says those of copper were common among the lower classes in the time of Elizabeth: yet roses were worn in the reign of James I. Buckles of the present construction seem to be a Dutch invention, and to have been brought into fashion in the time of William and Mary, for in an old newspaper printed in 1693 is the following remark upon the wearing of them:—"Certain foolish young men have lately brought about a new change in fashion: they have begun to fasten their shoes and knee-bends with buckles instead of ribbands, which will gall and vex the bones of those vain coxcombs beyond suffrance, and make them repent of their folly." Buckles fell gradually into disuse towards the close of the last century.

BULLS, *Papal*. From bulla, a seal: those of lead are traced so far back as the year 772: those having the heads of St. Peter and Paul on one side, and on the reverse the name of the Pope and the year of his pontificate, to the year 1153: some had gold and silver seals. Waxen bulls, or seals, were first attached to deeds and writings in this country by the Normans. By the 23d Elizabeth the publishing of any papal bulls in this country is made treason.

BULL Baiting was an ancient amusement among the inhabitants of this country, and is noticed so early as the year 1209, at Stamford in Lincolnshire; we also read of another diversion called bull-running, at Tentbury in Staffordshire, in 1374.

BURIAL. The Rabbins contend that the first hint for burial was taken from birds : Adam and Eve, they say, being utterly at a loss what to do with the dead body of Abel, were relieved from this perplexity by observing a crow throw earth and leaves over the body of its dead companion. Cicero states *inhumation* to be the most ancient mode of burial, though the custom of *burning the body* is of considerable antiquity, and is supposed to have originated when national animosities were carried so far as to the inhuman treatment of the dead. We find that Saul was burned at Jebesh, and his bones afterwards buried : frequent mention is also made of the Greeks being burned on funeral piles in the Trojan war, and their ashes collected and deposited in urns. Virgil and Ovid speak of burning as the practice before the foundation of Rome ; and though, according to Plutarch, Numa, who succeeded Romulus as the second king of Rome, about 700 years B. C. had directed that his body should be deposited in a stone coffin, and thus recommended this mode of burial, yet many ages elapsed before it was generally adopted : nor did the custom of burning cease in Europe till sometime after the introduction of Christianity, when burial in vaults and tombs, after the manner of the Jews, was introduced.

The ancient Britons and Saxons were buried under barrows of earth and stone ; the rich being generally burnt, and their ashes collected and deposited in urns, after the manner of the Greeks and Romans. On the arrival of St. Augustin or Austin, in Britain, in 596, and the consequent conversion of the natives, *coffins*, as well as the mode of placing the body to the east, (from the belief that our Saviour would come to judge the world from that quarter of the heavens) universally took place. It was also the custom with our Saxon ancestors, and seems to have been adopted from the Romans, to clothe the bodies of the deceased in those habits of dignity and splendour to which they had been entitled in their life-time ; and this practice was not confined to personages of exalted

rank; but extended to those of inferior degree, as well clergy as laity: kings were buried in their royal robes; knights in their military garments; bishops in their pontifical vestments; priests in their sacerdotal habits; and monks in the dress peculiar to the order to which they belonged.

The oldest mention of a coffin in the Saxon times, is that in which Ethelred was buried in 695, from which period stone coffins have been continually discovered in every part of England, and may be regularly traced from the ninth century to the reign of Henry III., some indeed so late as Henry VIII.: however, it was customary for the monks to be interred in the bare ground till the year 1195, when Warren, abbot of St. Alban's, ordered that they should be buried in stone coffins.

The ancients generally buried *without* the city walls, from an opinion that the touch, sight, or even neighbourhood of a corpse defiled a man, and likewise to keep the air of the city free from the stench of putrified bodies: some few, however, as a mark of distinguished honour, were occasionally permitted to be buried within the walls of the city; and in the fourth century, this permission became to be generally granted. During the first three hundred years after Christ burial in churches was allowed; but was severely prohibited by the Christian emperors for several ages after. The first step towards the revival of this privilege seems to have been the practice of erecting churches over the graves of some martyrs in the country, and translating the relics of others into churches in the city: the next was allowing kings and emperors to be buried in the atrium or church porch. The reason alleged by Gregory the Great in 750, when he granted permission for burying in churches or in places adjoining to them, was, that the relations and friends remembering those whose sepulchres they beheld, might be induced to offer up prayers for them; and this reason was afterwards transferred into the body of the canon law. The principle being thus established in the

Romish church by Gregory, was soon afterwards adopted in England by Cuthbert, archbishop of Canterbury; and the practice of erecting vaults in chancels and under the altars was begun by Lanfranc, archbishop of Canterbury, when he rebuilt the church in that city in 1075: from that time the matter seems to have been left to the discretion of the bishop. By our common law, no person can be buried within the church without consent of the incumbent, exclusively of the bishop, because the freehold of the church belongs to him, and he is deemed the best judge whether the general conduct of the deceased entitled him to that distinction. Formerly none but criminals, or people of bad character, were buried on the north side of the church.

BURLESQUE. This jocose kind of poetry is attributed to the Italians, from whom it passed into France about the middle of the seventeenth century.

BURNING GLASS, or Mirror. This machine for collecting the sun's rays by means of concave reflecting mirrors into a point, so as to render them capable of burning objects placed therein, was invented by Archimedes, who by this contrivance burnt to ashes the Roman ships besieging Syracuse, under the command of Marcellus; and it is said that Proclus adopted the same method to destroy the navy of Vitellian, besieging Byzantium: it is also probable that the Romans had a method of lighting their sacred fire by means of reflecting concave specula. Pliny states that the ancients were acquainted with burning convex glasses; and makes mention of globes of glass and crystal, which being exposed to the sun, burnt the clothes and flesh on people's backs; and Lactancius adds, that a glass sphere, full of water, and held in the sun, lighted the fire even in the coldest weather, which incontestably proves the effects of convex glasses.

The most remarkable burning mirrors among the moderns,

are those of Sepatala, of Milan, which burnt at the distance of fifteen feet ; and those constructed by M. Buffon, who by his experiments with them, seems to confirm the possibility of the destruction of the Roman fleet in the manner related of Archimedes, and some account of his Speculum may therefore be thought worthy of notice.

In the year 1747 M. Buffon constructed a machine with a hundred and forty plain mirrors, each about four inches long, and three broad, fixed at about a quarter of an inch distance from each other, upon a large wooden frame of about six feet square : each of these mirrors had three moveable screws, which were so contrived that the mirror could be inclined to any angle, and in any direction to meet the sun ; by this means the solar image of each mirror was made to coincide with all the rest : the experiment was first tried with twenty-four mirrors, which readily set on fire a combustible matter, prepared of pitch and tow, and laid on a deal board, at the distance of sixty-six French feet : he then further pursued the attempt, and put together a kind of polyhedron, consisting of one hundred and sixty-eight pieces of plain looking glass, each being six inches square, and by means of this some boards of beech-wood were set on fire at the distance of one-hundred and fifty feet, in the month of March ; and a silver plate was melted at the distance of sixty feet. This machine in the next stage of its improvement, contained three hundred and sixty plain mirrors, each eight inches long and six broad, mounted on a frame eight feet high and seven broad : with twelve of these mirrors light combustible matters were kindled at the distance of twenty feet ; at the same distance with forty-five mirrors a large tin vessel was melted, and a thin piece of silver with one hundred and seventeen mirrors. When the whole machine was employed, all the *metals* and *metallic minerals* were melted at the distance of twenty-five, and even of forty feet : and wood was kindled in a clear sky at the distance of two hundred and ten feet. The focus, at the distance

of fifty feet, was about seven inches broad ; and at the distance of two hundred and forty feet it became two feet in diameter. M. Buffon afterwards constructed a machine which contained four hundred mirrors, each half-a-foot square, with which he could melt lead and tin at the distance of one hundred and forty feet.

Although no solid substance is capable of resisting the efficacy of modern burning glasses, yet it was long ago observed by the academicians Del Cimento, that spirit of wine could not be fired by any burning glass which they used ; and notwithstanding the great improvements which these optical instruments have since received, yet none have hitherto been constructed of sufficient power to set fire to any inflammable liquors whatever.

BUTCHER. The Romans established regular colleges or companies, composed of a certain number of citizens, whose office was to furnish the city with the necessary cattle, and to superintend the butchers in the preparing and vending their meat. Plautus shews that veal, beef, pork, &c., were exposed to sale on stands in the streets. Nero built a noble market for the sale of butchers' meat.

Butchers' sheds in this country are first noticed as being erected at Dunstable in 1279; and were common in the fifteenth century. In the middle ages, the right of a common slaughter-house, where the inhabitants might have their beasts killed, was a feudal privilege.

BUTTER, according to Herodotus, was first made by the Scythians and other northern nations, but neither Homer, Theocritus, Euripides, or any of the Greek poets, make mention of it; though milk and cheese are frequently noticed by them; and Aristotle, who has collected abundance of curiosities relating to these, is silent with respect to butter. The Romans acquired their knowledge of it from the Germans ;

though when they were acquainted with the art of making it, they employed it only as an ointment in their baths, or for medical purposes, and never in the preparation of food; nor is any notice taken of it, in that respect by the authors who treat on agriculture, though they have given particular information concerning milk, cheese, and oil: the ancients in the proportion of their food usually accustomed themselves to the use of good oil; which is still customary in Italy, Spain, Portugal, and the southern parts of France, it being found difficult in warm countries to preserve butter for any length of time. Butter on *bread*, instead of *kitchen grease* is mentioned as being introduced in the time of Edward IV.

BUTTONS of brass, by way of ornament, are noticed in this country in the tenth century; but it was not till the commencement of the fourteenth that they formed any necessary part of our dress, ribbons or laces having been generally used in their stead. In the paintings of the fourteenth and succeeding centuries, these ornaments frequently appear upon the garments of both sexes; but in a variety of instances they are drawn without a button-hole, and placed in such situations as preclude the idea of their usefulness: they seem to have been made of gold or silver thread; and probably their fabrication should be referred to the goldsmiths, rather than to the workers of silk. The manufacture of buttons is mentioned as a separate trade till about the middle of the seventeenth century, when the importation of foreign buttons, made with the needle, was prohibited. Soon after this the invention of *metal* buttons took place; to encourage which, a penalty of forty shillings was imposed in 1690 on every dozen of buttons, consisting merely of a mould, covered with the same kind of cloth as the garment, and the importation of metal buttons prohibited.

CABBAGE. According to Evelyn, in his "Sylva," this useful legume was not known in this country till the year 1539, when it was imported from the Netherlands, and for many years afterwards England was still supplied with cabbages from Flanders. Bullein, in his "Boke of Simples," written in 1562, observes on this vegetable, that "it is good to make pottage withall and is a profitable herb in the commonwealthe, which the Flemings sell deare, but we have it growinge in our owne gardens, if we would preferre our owne commodities, as there be great plentye growinge between Allbrought and Harthworth, in Suffolk, upon the sea-shore." Gough states that this vegetable was introduced and first cultivated in this country by Sir Anthony Ashley, and that the representation of one is sculptured at the foot of his monument, at Winborn St. Giles's, in Dorsetshire.

CABAL. This word had its origin from its being formed of the initial letters of the unpopular noblemen who constituted the ministry of Charles II., viz: Clifford, a papist; Ashley, a deist; Buckingham, an atheist; Arlington, a papist; and Landerdale, a presbyterian.

CABINET. Councils, are said to have been instituted by Charles I., who, besides his privy council, erected a kind of cabinet council or junta, composed of those ministers who were in his immediate confidence, which at that time were

the Archbishop Laud, the Earl of Strafford, and Lord Colington, with the Secretaries of State ; some however contend that cabinet councils are of much greater antiquity, but as they seem in general to have been formed by the Parliament as a check upon the crown, they can scarcely be admitted under the modern acceptation of that term.

CAGES. The Greeks seem to have had cages for birds similar to the modern, being formed of baked earth with bars of threads.

CALENDAR, a kind of Almanac, comprehending the order of the days, weeks, months, feasts, &c. throughout the year, and so named by the Romans, from the word *Calendæ* being written in large characters at the head of each month. Varro says this word is derived from the Greek *Kaleo*, I call, or proclaim, because before the publication of the Roman *Fasti*, it was one of the offices of the Pontifices, to watch the appearance of the new moon, and give notice thereof to the *Rex Sacrifcarius* ; upon which a sacrifice being offered, the pontiff summoned the people together in the capitol, and there with a loud voice proclaimed the number of *calends*, or the days whereon the *nones* would be ; this custom continued till the year of Rome 450, when C. Flavius, the curule ædile, ordered the *fasti*, or calendar, to be set up in public places, that every body might know the difference of times and the return of the festivals.

The Calendar now in use throughout Europe, being a correction or reformation of the Julian, was constructed by Aloisius and Antoninus Lilius, brothers and eminent astronomers of Verona, under the auspices of Pope Gregory XIII., in 1582, who published a brief in the month of March, ordering all the ecclesiastics under his jurisdiction to conform to this new method of reckoning, and exhorting the christian princes to adopt it in their dominions. Accordingly in the

course of a year it was introduced into all Catholic countries, but not into the Protestant States of Germany till 1700, nor in England till the year 1732.

The Dominical Letters were introduced by the primitive Christians, in lieu of the nundinal letters in the Roman calendar. (*See Week.*)

CALICO. This species of cotton cloth receives its name from Calicut, a city on the coast of Malabar, being the first place at which the Portuguese landed on their discovery of India, and was first imported into England by the East India Company in 1631. (*See Printing on Calico.*)

CALLIGRAPHY. The first person noticed as being able to write distinctly within a very confined space, is Calliocrates, an Athenian sculptor, who lived about 472 years before Christ; and is said to have engraved some of Homer's verses on a grain of millet. Peter Ball, an Englishman, in 1575, wrote the Lord's prayer, creed, ten commandments, and two short prayers in Latin, with his own name, motto, day of the month, year of the Lord, and reign of the Queen, in the compass of a silver penny, encased in a ring and bordure of gold, and covered with a crystal, all so accurately wrought as to be very legible.

CAMBLET, a kind of stuff originally manufactured in Asia, of camel's hair, from whence its name; and forming to this day the clothing of the poorer class of people in that quarter of the globe. This kind of cloth being strangely coarse, rough, and prickly, was, after the example of St. John the Baptist, used among the monks by way of mortification. In the commencement of the thirteenth century, a species of cloth, in imitation of the camblet, but made of goat's instead of camel's hair, was manufactured in France, and garments of it were worn by St. Louis, as also by our

kings on fast days from the time of Henry V. to Charles II. Watered camblets are often called moreens, *moraine* being the French term for that kind of wool which the tanner or currier removes from the hide by the application of quick lime.

CAMBRICK, a fine species of linen, originally made at Cambray, from whence it was introduced into this country by the Dutch emigrants in 1563. The manufacture of it was first attempted in Scotland in 1760, and has been attended with considerable success.

CAMEL. The name of a machine invented by Bekker, a Dutchman, in 1688, for carrying ships over shallow waters, which invention has been adopted by the Russians, for conveying their vessels over the banks formed at the mouths of the Neva.

CAMERA OBSCURA. This instrument, which throws the images of objects in their natural colours and motions, on a white ground, according to Friend, was invented by Friar Bacon in the beginning of the thirteenth century; others give the invention to Leo Baptista Alberto in 1437; but more generally to Baptista Porta, who published a description of it in 1589.

CAMPHOR, a kind of gum, obtained from the *laurus camphora*, a large forest tree in the islands of Borneo and Sumatra, and from other species of *lauri*, the art of purifying which is carefully kept secret. Venice formerly had the monopoly of this manufacture; afterwards it was successfully practised in Holland; and at present large quantities are refined by some of the English druggists. Proust discovered a method of extracting this gum from the essential oils produced in the southern countries of Europe.

CANALS. The advantages of navigable canals did not

escape the observation of the ancients. From the most early accounts of society, we read of attempts to cut through large isthmuses, in order to make a communication by water betwixt different nations, or distant parts of the same nation, where the carriage was long and expensive. According to Herodotus, Necas, son of Psammitichus, attempted to open a communication between the Nile and the Red Sea by means of a canal; but was prevented from completing it by the advice of the oracle, after having lost 120,000 men in the enterprise. Strabo, however, ascribes the commencement of it to Sesostris, before the Trojan war: it was resumed and carried on by Darius, son of Hystaspes, who relinquished the undertaking on a representation being made to him by unskilful engineers, that the Red Sea, being higher than the land of Egypt, would overwhelm and drown the whole country. Ptolemy Philadelphus, however, finished the undertaking, and constructed in the most convenient part of the canal a dam or sluice, ingeniously contrived, which could be opened to give passage to the water as occasion might require, and is therefore the origin of modern *locks* to canals. Both the Greeks and Romans made several unsuccessful efforts to cut through the isthmus of Corinth, for the purpose of forming a navigable passage by the Ionian sea, into the Archipelago. The great canal of China, extending from Pekin to Canton, a distance of 825 miles, was commenced upon in the ninth century, and is sufficiently broad and deep to carry vessels of considerable burthen.

This mode of inland navigation was introduced into England by the Romans, who, when Domitian was emperor, constructed a canal from the river Nyne, a little below Peterborough, to the river Witham, three miles south of Lincoln; and in 1134, during the reign of Henry I., a canal was made to form a junction between the Trent and the Witham.

CANARY BIRDS, formerly called sugar birds, from

their partiality to the sugar cane, were first brought by the Spaniards from the Canary islands in the year 1555; who in order to secure the trade to themselves, forbid the exportation of males. The breed of these birds have, for upwards of two centuries, been particularly attended to by the Germans and Swiss; and it has been estimated that several thousand of them are annually imported into England from Inspruck and its environs. The *Canary seed* was about the same period brought from the islands into Spain, and from thence dispersed over Europe.

CANDLES. The most ancient method of illuminating apartments during the night was apparently by burning dry and resinous wood, either in brasiers, or more simply, by single branches, like flambeaux: the use of oil succeeded to these imperfect and incommodious methods, and *candelabra*, for supporting lamps, are among the elegant and ornamental remains of antiquity. Pliny mentions that the Romans first made use of candles, which originally were little strings, dipped in pitch or surrounded with wax; afterwards they made them of the papyrus, covered likewise with wax, and sometimes of rushes, by stripping off the outer rind, and only retaining the pith. Pliny also observes that in his time *wax candles* were made use of for religious purposes, and those of *tallow* for common occasions.

Candles were introduced into churches in the year 274. St. Jerome mentions the custom of lighting up candles at the reading of the gospel, even at noon-day, describing it as an emblem of joy, and of that light which the Psalmist says was a lamp unto his feet and a light unto his paths.

It is probable that the Romans might have introduced into this country the method of making candles, or at any rate that Augustine and his successors must have made use of wax candles in their cathedrals and churches; we read that Alfred made use of a graduated wax candle, inclosed in a

lantern, as the best made then known for ascertaining the divisions of time. Candles were not in general use for domestic purposes till towards the close of the thirteenth century, when they are first noticed as being made of tallow. There was formerly a kind of excommunication by inch of candle, until the consumption of which the sinner was allowed to repent.

CANDLEMAS. This festival was instituted by Pope Gelasius; some ascribe the origin to Pope Virgilius in 536. It takes its name from the number of candles used in the processions of the day, as also from the circumstance of the candles which were required for the church being then consecrated; these popish ceremonies were prohibited in 1549.

CANISTER, a small box for holding tea, and first mentioned on the introduction of that vegetable.

CANNON. It cannot be ascertained at what time guns were first invented, yet it is certain that in some parts of Asia a species of artillery similar to our cannon, though in a very rude and imperfect state, must have been for many ages used. Philostrates speaks of a city near the river Hyphases, in India, which was accounted impregnable, and its inhabitants relations of the gods, because they threw thunder and lightning upon their enemies; hence some imagine that the use of cannon was not unknown to the Eastern nations in the time of Alexander the Great. And it is asserted by many of our modern travellers, that cannon was common in China when Kitey was Emperor, in the year 85 of the Christian era. The word itself is probably derived from the Greek *kanna*, a reed or cane, which was the name given by the modern Greeks to those fiery tubes invented by them about the commencement of the seventh century, which being loaded with stones, exploded with a violent noise, but the

account of them is very unsatisfactory, and the composition of the Greek fire with which they were charged, has eluded the researches of modern chemists.

The introduction of cannon into the Western part of Europe, cannot be traced to an earlier period than the commencement of the fourteenth century, at which time they were known under the appellation of bombardæ, on account of the noise they made, and are described as mere cylinders constructed of long bars of iron soldered together lengthwise, and strengthened by iron hoops, the upper part of the chambers being made to open for the admission of the can which held the charge ; they were fixed on sledges and made of large calibres for the purpose of throwing stone balls, some of which were five feet in circumference.

The Germans attribute the invention or introduction of cannon into Europe, to Albertus Magnus, a Dominican monk, about the middle of the thirteenth century, and mention is made of one found in the arsenal of Bamberg of the date of 1323 ; it is certain that cannon was used by the Moors who defended Algesiras in Spain against Alonzo, king of Castile in the year 1343, at which time they must have been generally known, for we find them a few years afterwards made use of as field-pieces by the English under Edward III. who planted five of them on a small hill near the village of Cressy, which chiefly contributed to decide the celebrated battle of that name in 1346. This seems however to have been the first time they were ever employed in the field, from which circumstance several of the French writers have laid claim to a greater degree of national humanity than they allow to the English : one of these in his *Treatise on Gunnery* observes—" *Les Anglais moins humains sans doute nous devancerent et s'en servirent a la célèbre bataille de Creci, qui eut lieu entre les troupes du roi d'Angleterre Edward III., qui fut si méchant, si perfide, qui donna tant de fil a retordre à Philippe de Valois, et aux troupes de ce dernier ; et*

ce fut en majeure partie à la frayeur et à la confusion qu'occasionnerent les canons, dont les Anglais se servoient pour la première fois, et qu'ils avoient postés sur une colline proche le village de Creci, que les Français durent leur deroute." 'The English also made use of cannon the following year at the siege of Calais. These guns however are generally described as unwieldy and unmanageable, and of course unfit for quick or expeditious service, till about the year 1494, when the French in their wars in Italy, had greatly improved upon the construction of them, and had several brass pieces drawn by oxen and horses, which could keep pace with the movements of the army, and discharged iron shot instead of stones.

Cannon are stated to have been first employed for *naval* purposes on the Baltic sea in 1350, and by the Venetians in 1380:

The introduction of cannon into England is attributed to the capture of some French vessels with guns in 1386; it was first used in this country at the siege of Berwick in 1405. Until the reign of Henry VIII. cannon was generally purchased from abroad, and though both he, as well as his father, had Flemish gunners to teach the art of gunnery, yet military people at that time possessed but a small share of learning of any kind, and scarcely any of a mathematical nature: what they did professionally in regard to artillery was entirely the effect of practice, and a bare repetition of what had been previously performed, so that at this period the ordnance was seldom capable of being fired more than once before it was charged by the cavalry.

From a Persian inscription on a cannon in the castle of St. Julio de Barra, about ten miles from Lisbon, it would appear that the method of making iron cannon by *casting them in moulds*, was practised so early as the commencement of the fifteenth century, as that piece of ordnance is stated to have been cast in the year 1400; brass cannon were cast in France in the commencement of the sixteenth century. Henry VIII. about the close of his reign in 1543, procured people from

abroad to instruct his subjects in the art of casting guns, both of iron and brass; the method of *boring* them was adopted about the middle of last century; previously to which they were not cast solid, but with a cylindric cavity, having nearly the same diameter with the intended calibre of the piece, which was afterwards enlarged to the proper size by machines.

The great gun at Dover, called Queen Elizabeth's pocket pistol, is of brass, cast, and carries a sixty pound shot; it was a present from the Emperor Charles V. to Henry VIII.

CANNON Balls. In 1418 the *Foedera* mentions an order of Henry V. to the clerk of the works of his ordnance, for making seven thousand stone balls for his cannon, of different sizes, from the quarries of Maidstone in Kent; and although iron balls are noticed as being used by the French towards the close of the fifteenth century, yet no mention is made of them in our history previous to the year 1560: when, in an acquittance for the delivering up of the artillery at Boulogne, they are styled *bouletz de fer*; balls of stone were, however, used for near a century afterwards, and were not totally laid aside till the commencement of the civil wars in the time of Charles I.

CANON. Paschier observes that this order of priesthood, was not known before the time of Charlemagne; and that a college of canons was first instituted at Tours by Archbishop Baldwin in the time of Clotharius I.

CANON Law, a collection of ecclesiastical constitutions, originally compiled by Dionysius Exiguus, A. D. 520. This code was afterwards reformed by Ivo in 1114; and by Gratian, a Benedictine monk, in 1151; soon after which it was introduced into England, and in 1280 formed a part of the academical studies at Oxford.

CANONICAL Hours for Prayers were instituted A. D. 391, and were seven in number; first, *prime*, about six, a.m.; second, *tierce*, at nine, a.m.; third, *sext*, at noon; fourth, *nones*, about three; fifth, *vespers*, about six; sixth, *complin*, at eight; and seven, *mattins* and lauds at midnight. The canonical hours in England are from eight in the morning to noon; after which marriage cannot be legally performed in any parish church.

CANONIZATION. The first person who had the honour of being enrolled among the list of saints after his decease, was St. Uldericus, about the end of the tenth century. This distinction was originally confined to those who had suffered martyrdom, but by degrees extended to confessors and other religious persons. The right of canonization was exercised by bishops and princes, as well as by the Pope, till about the year 1170, when Alexander III. restricted the power to the pontificate.

CAP. This kind of head covering, according to Pasquier, who wrote about the middle of the sixteenth century, was anciently a part of the *hood*, the skirts of which being cut off, left the round cap a commodious cover for the head, and was worn by the clergy and lawyers; but becoming common, those of the gown changed it for a square one, which was invented by a Frenchman, called Patrouillet; he adds that the giving of the cap to the students in the Universities, was to denote that they were no longer liable to be punished by their masters; in imitation of the ancient Romans, who gave a *pileus* or cap to their slaves in the ceremony of making them free: hence the cap was considered as the symbol of liberty, and was frequently exhibited on the point of a spear on popular insurrections.

CAPON. The method of fattening fowls by depriving

them of their strength, and rendering them more delicate for the table, was known to the ancient Greeks and Romans, and supposed to have been invented by the Delians : it was introduced into this country by the Romans. Le Bruyere Champier, in his book on Cookery, published in 1530, describes the present mode of making capons as a recent discovery ; while others state it to have been practised in the seventh century.

CAPTAIN. Grose states that this rank in the army, as applied now to officers having the command of small bodies of soldiers, is first mentioned in the reign of Henry VII. The commanding officers of ships are noticed under this title so early as Edward I.

CARDINAL. This order of priesthood was introduced into the church about the year 300, at which time Cardinals were the principal priests and incumbents of the parishes of Rome : the period when they acquired authority over the bishops, and especially the sole power of electing the Pope, which was originally vested in all the clergy of Rome, is stated to have been about the middle of the eleventh century, when Nicholas II. was raised to the pontificate. The privilege of wearing red shoes and garments was granted to the cardinals in 1198 ; and in 1244 Innocent IV. directed them to assume the red hat, the colour being considered as an emblem of their readiness to shed their blood for the catholic faith. The title of Eminence was given to them by Urban VIII. in 1630.

The custom of confining the cardinals during the conclave, in a similar manner to our Jury, without light or provisions, until they shall have decided upon a person to fill the pontifical chair, arose from the long interval of two years which had elapsed since the death of Clement IV. in 1268, without the cardinals having been able to agree among themselves as to the nomination of his successor : at length the inhabitants of Viterbo, in which city Clement died, being fearful lest the

assembly should separate without coming to any conclusion, closed the gates of their city, and confined the cardinals in the pontifical palace, adjoining the cathedral, until they were brought to a better understanding.

CARDS. It is generally supposed that playing cards under the name of *pagille pictæ*, or *painted leaves*, were invented by Jaquenim Gringonneur, a painter in Paris, about the year 1390, for the purpose of diverting Charles VI., then king of France, who was fallen into a melancholy disposition; for in the account of that king's cofferer is the following item:—
 “Paid fifty-six shillings of Paris to Jaquenim Gringonneur, the painter, for three packs of cards, gilded with gold, and painted with divers colours and divers devices, to be carried to the king for his amusement.” Some, however, assert that cards were known in the east and in Spain at a much earlier date; and that Edward I., during his stay in Syria in 1270, was taught the game of the *quatuor reges* or *four kings*; while others contend that cards could not have been known prior to the time first mentioned, as they are not to be found in any painting, sculpture or tapestry; and that in a proclamation, issued in 1390, forbidding by name all manner of sports and pastimes, that the people might exercise themselves in shooting with bows and arrows, and be in a condition to oppose the English, no prohibition relative to cards is mentioned, nor are they noticed in any of the ecclesiastical canons prior to 1390: though about twenty years afterwards the clergy, by a Gallican synod, were prohibited from indulging themselves in the amusement of cards.

From an act passed in the third year of Edward IV. A.D. 1463, to prevent the importation from abroad of playing cards, it is evident this diversion must have been for some time known in England; it is mentioned as the favourite amusement of the court during the reign of Henry VII., and that the daughter of that king, who married James IV. of

Scotland, introduced it into Scotland. Cards however were by no means common in England for several years afterwards, as scarcely any mention of them occurs during the reigns of Henry VIII. and Edward VI., either in Rymer's *Fædera* or the Statute Book ; it is therefore probable that the fashion of card playing was revived on the arrival of Phillip II., as the Spaniards were passionately fond of the game, and Spanish cards were in general use in the early part of Queen Elizabeth's reign, though the French cards were afterwards more in request.

In the time of James I. playing with cards was so general an amusement, that the people used to take them to the theatres, to divert themselves between the acts, or until the commencement of the play.

The Spanish game of *Primero* is said to be the most ancient one on the cards ; to this succeeded *Ombre*, also a Spanish game ; afterwards *Quadrille* came into vogue ; the game of *Whist* is said to be borrowed from the old French game of *Tower a la Triomphe* (from whence the word *trump*) played in the sixteenth century. It was anciently connected with a game called *English Ruff*, and *Honours*, or *Slam*, and is noticed by Taylor, the water poet, in 1632 ; about the commencement of the eighteenth century, it had acquired the name of *Whisk* and *Swabbers*, some say from the four deuces that were left out being called swabbers ; others state that the name of *swabbers* was given to certain cards entitled to a share of the stake, independent of the general event of the game, and that the fortunate possessor of them on clearing the board, was compared to the swabber or clearer of the deck at sea.

By the four suits or colours of the cards, it is said the inventor meant to represent the four states or classes of men in the kingdom ; the *cœurs* or *hearts* were designed for the clergy : the points of lances which we have called *spades*, from the Spanish *espades*, swords, for the nobility and mili-

tary : the *diamonds* for the wealthiest portion of the kingdom, the citizens : and the trefoil leaf or clover, which we call *clubs*, from the Spanish *bestos*, staves, the labouring classes.

The nine of diamonds is called the curse of Scotland from the circumstance of nine diamonds being the armorial bearing of Sir James Dalrymple, afterwards Earl of Stair ; who by his violent and arbitrary conduct as one of the Judges of the Court of Session, had incurred the odium of the populace.

CARP. This fish, which on account of its quick growth and increase, is the most valuable of all for the stocking of ponds, was brought into England by Leonard Maschel, in 1514, though the old distich says :—

Carp, hops, turkeys, pilchards, and beer,
Came into England all in one year.—1525.

CARPETS were originally manufactured in Persia, from whence they were introduced into Europe about the time of the crusades. Couches and floors covered with carpets, according to the present custom, were discovered in the ruins at Pompeii, therefore the use of them was well known to the Romans. In the middle ages a carpet was generally spread before the altar, and we read that Sinchius, bishop of Toledo, had his floor covered with a carpet or tapestry, in 1255. Small pieces of carpet are mentioned as being used in bedrooms in this country in the fourteenth century. Turkey carpets were imported about the close of the reign of Henry VIII., but mats and rushes were generally used by the nobility for many years afterwards, as the chamber of Edward VI. was only matted

The manufacture of carpets was introduced into France from Persia, in the reign of Henry IV., about the year 1606; and a manufactory established at Chaillot, near Paris. In the year 1750, two workmen were procured from Chaillot, and

under the patronage of Mr. Moore, and afterwards of the Duke of Cumberland, introduced into England the method of weaving and working carpets; and in 1755 a carpet manufactory was established at Axminster.

CARRIAGE. Any attempt to trace the origin of wheel carriages must, from their great antiquity, be fruitless; those in common use in India are still of the rudest construction, the wheels being solid circular pieces of wood, having a bar crossing them for a linch-pin. *Iron linch-pins* were however used by the Greeks, and the *Sperturia* of Homer is supposed to allude to the cap placed at the end of the axle to keep it from dust. Virgil mentions the iron rim round the wheels under the appellation of *ferrati orbes*, yet many without this guard occur in the middle ages, possibly because they were then frequently made of solid wood. Pliny says that the Phrygians were the first who used carriages with four wheels. (*See Coaches.*)

CARTRIDGES of tin containing a charge of powder, and *cartridge boxes*, were introduced on the continent about the year 1580. In the time of Henry VIII. they were hung round the neck, having powder-horns for priming attached to them; the balls were kept in a separate bag. In the reign of Elizabeth it was directed that all horsemen should have the charges of their pistols ready in patrons fastened to the waist, the powder made up compactly in paper, and the ball tied to it by a thread.

CASKS, wooden vessels, girt with circles or hoops, were, according to Pliny, invented by the people who lived at the foot of the Alps, for the purpose of preserving wine; in his time they lined them with pitch. During the government of Tiberius and Vespasian, the art of constructing vessels of different pieces of wood, seems to have been well known in

Rome ; and even previous to this period, Vallo and Columella, in treating on rural economy, speak distinctly of vessels formed of different pieces, and bound together with circles of wood or hoops, which description accords exactly with the construction of casks now in common use. It is not known when the art of making them was brought into this country, but there is the figure of an iron-hooped barrel of the modern form on a bas-relief in Westminster abbey.

CASTLES. Unless the fortified Roman posts of Rechborough, Portchester, and Pevensey, can be considered as such, we may ascribe the first erection of castles to Alfred, who built one at Athelney, (now Boroughbridge) ; and his daughter, Elfleda, governess of Mercia, built eight castles to check the incursions of the Danes. William of Malmesbury, mentioning the re-building of Exeter by Athelstan, about the year 930, says, *Urbem igitur illam, quam contaminatæ gentiæ repurgio deæcaverit, turribus munivit. Muro ex quadratis lapidibus cinxit.* The castle at Colchester has by some been ascribed to the Romans ; while others affirm it to have been built by Edward the elder about the year 1150. William the Conqueror, in order to secure his newly acquired possessions, directed a great number of castles to be built in various parts of the kingdom, under the superintendence of Gundulf, bishop of Rochester, who was also an eminent architect : his example was followed by his successors ; and it is said 1115 castles were built during the reign of Stephen.

The castles were generally situated on an eminence near a river, the whole site of the castle being surrounded by a deep and broad ditch, sometimes filled with water, and sometimes dry, called the fosse ; before the great gate was an out-work, called a barbican or antemural, which was a strong and high wall, with turrets upon it, designed for the defence of the gate and draw-bridge : on the inside of the ditch stood the wall of the castle, about eight or ten feet thick, and between

twenty and thirty feet high, with a parapet and a kind of embrasures, called crenelles, on the top : on this wall, at proper distances, were built square towers, two or three stories high, containing apartments for the principal officers ; and adjoining to these were lodgings for the common servants or retainers, granaries, store-houses, and other necessary offices : on the top of the wall, and on the flat roofs of these buildings, stood the defenders of the castle when it was besieged, and thence discharged arrows, darts, and stones on the besiegers : the great gate of the castle stood in the course of this wall, and was strongly fortified with a tower on each side, and rooms over the passage, which was closed with thick folding doors of oak, often plated with iron, and with an iron portcullis or grate, let down from above : within this outward wall was a large open space or court, called in the largest and most perfect castles, the *outer bayle* or *ballium*, in which stood commonly a church or chapel : within this outer bayle was another ditch, wall, gate, and towers, inclosing the inner bayle or court, within which was the chief hill and tower, called the *keep* or *dungeon*. This tower, the palace of the prince or baron, and residence of the constable or governor, was a large square fabric, four or five stories high, having small windows in very thick walls, which rendered the apartments within it dark and gloomy : in it was the great hall, in which the owner displayed his hospitality, having at the top an elevated floor, called the *deis*, where the chief table stood, at which persons of the highest rank dined : the lower part of the keep consisted of dark rooms or vaults, often used for the confinement of prisoners ; and hence it has been inferred this principal tower derived its name of *dungeon*.

Among the feudal castles, the gate-house was the favourite mark of dignity : the keep, as a super-eminent tower, appears to have been neglected about the time of Edward III. The old passes into our castles were usually arched bridges of stone : draw-bridges made their appearance in the fourteenth

century, but were not much used till the time of Henry VIII.

Castle architecture seems to have been a little on the decline during the reign of Edward III., its strength and solidity being then first sacrificed to convenience ; and in the reign of Henry VIII. it had descended from the lofty towers, which, displayed at Caernarvon, Conway, and Caerphilly, awed the beholder, to the block-houses of Calshot, Hurst, Sandown, Sandgate, and South Sea.

Berkeley, originally founded in the reign of Stephen, is one of the best remains of an ancient feudal castle ; and the most complete and genuine models of what a castellated mansion was in the days of Henry VIII. may be gathered from the ruins of Cowdray House, in Sussex, and Haddon house, in Derbyshire.

CAT. This animal is said to have been brought into Cornwall from Cyprus by some foreign merchants who came for tin, long before the Romans had any footing in the Island.

CAT-gut. Strings made of sheep's bowels are mentioned by Homer, and supposed to have been invented by Lyrus for the use of his lyre. It is principally imported from Italy.

CATALOGUE. The first catalogue of English books was compiled by Andrew Maunsell, a bookseller, who resided at Lothbury, near Cheapside, in 1595 ; the work is dedicated "To the Queenes most sacred Maiestie, to the Reuerend Diuines and Louers of Diuine Books, and to the Worshipful the Master Wardens and Assistants of the Companie of Stationers, and to all others Printers and Booksellers in generall." *A catalogue of the stars* was first published by Hipparchus Rhodius about 128 years before Christ.

CATECHISM. First published by the Bishop of Winchester

ter, in 1552 ; it was anciently the custom to catechise people before baptism.

CATHEDRAL. This word takes its rise from the circumstance of the bishop being seated at the assemblies of the primitive christians in a kathedra, or chair, while the presbyters, who were also styled assessores episcoporum, sat on either side on benches. Until the time of Constantine the christians not being at liberty to build any places of public worship, their churches were considered merely as assemblies, and their cathedrals nothing more than consistories:

The monastery of Sherborne was converted into a cathedral in the year 705, and this is the earliest mention of one in this country.

CATHOLIC. Theodosius the Great is supposed to have introduced the term Catholic into the church, appointing by an edict, that the title should be applied, by way of pre-eminence, to those churches which adhered to the Council of Nice, in exclusion of the Arians, &c.; but the term was used in much earlier times, as by the Fathers Polycarp and Ignatius, the latter of which says, " Ubi fuerit Jesus Christus ibi est ecclesia Catholica." Some of the epistles are called Catholic, as being written to Christians in *general*, and not to those of any particular country. The Romish church now assumes the distinguishing appellation of the Catholic church, and the members of it are called Roman Catholics or Papists; the reformers being called Protestants, from their having protested against the decree of the Emperor Charles V., and appealed to a general council.

The total number of Catholics in England and Wales is computed at about 400,000. Among the clergy are four superiors, called Vicars Apostolic, deputed by the Pope, and whose vicarial powers are revocable at pleasure, each vicar having a certain province or see assigned to him ; and each priest a

separate district called a mission, officiating by virtue of a faculty, granted by the Apostolic Vicar of the district, and removeable at his pleasure. In the summer of 1813, Dr. Smith confirmed the following number of Catholic children in three towns only, viz : Manchester, 800 ; Liverpool, 1000 ; Preston, 1200.

The Catholic Peers are eight in number, viz : Norfolk, Shrewsbury, Fauconberg, Stourton, Petre, Arundel, Dormer, and Clifford. In Scotland two, the Earls of Traquair and Newburgh. The Catholic Baronets of England are sixteen in number, viz : Wm. Gerrard, (Lancashire) ; Edward Hales, (Kent) ; Henry Englefield, (Berks) ; George Jernyngham, (Norfolk) ; Henry Titchburne, (Hants) ; John Throgmorton, (Berks) ; Edward Blount, (Shropshire) ; Windsor Hunloke, (Derbyshire) ; Carnaby Haggerstone, (Lincolnshire) ; Thomas Webb, (Wilts.) ; Edward Smith, (Warwick) ; Richard Bedingfield, (Norfolk) ; Thomas Massey Stanley, (Cheshire) ; Thomas Gage, (Suffolk) ; Henry Maire Lewson, (Yorkshire) ; Piers Mostyn, (Flintshire). There is also one Scotch Baronet, John B. Gordon, (Tweeddaleshire).

CAULIFLOWER. This vegetable came originally from the Levant, and was first cultivated in England in 1603.

CAVALRY. Chariots were used in war above a thousand years before cavalry was introduced among the ancients. The Greeks seem to have had a terrible notion of being mounted on the back of a horse, and have accordingly made monsters of those whom they first beheld in that attitude, under the denomination of centaurs. In the course of time their amazement gradually diminished, and their intercourse with the Persians, who had regular bodies of cavalry 500 years before Christ, not only rendered riding horses familiar to them, but likewise convinced them of the advantages to be derived from them in war. The Romans were for a long time

unacquainted with the use of cavalry, making their whole force to consist of infantry, insomuch that even in an engagement their horsemen dismounted and fought on foot. The cavalry of Pyrrhus and afterwards of Hannibal, whose victories over the Romans were generally attributed to his superiority of cavalry, pointed out to them the expediency of maintaining a regular disciplined body of cavalry in their armies.

In modern times the first regular body of cavalry was raised by Charles VII. of France, in 1445, and consisted of 9000 men ; which also was the commencement of a standing army in Europe.

The first regular troop of horse was raised in this country in 1660. The modern method of *charging* was introduced by Gustavus Adolphus.

CELERY. It is related that Count Tallard, during his captivity in England, after the battle of Blenheim, first brought this vegetable into notice.

CENOTAPH. The Romans erected honorary tombs to the memory of such celebrated characters who had either fallen in battle, or by any other accident perished, so that their bodies could not be recovered, and gave to these *tumuli inanes et honorarii*, the same privileges and religious regard as real tombs. In the middle ages it was customary, when people of rank died, to perform the burial service with a standing hearse and *corpus fictum*, or pretended body, at those churches with which they had any connection ; and many entries of such, as actual burials, occur in parish registers, although the persons were interred elsewhere.

CENSERS, and chaffing dishes for perfuming rooms, were common in the sixteenth century.

CENSOR of Books. Soon after the invention of printing,

when books became to be greatly multiplied, it was deemed expedient that laws should be made to prevent the publishing of any matter prejudicial to the cause of religion. Beckman states that the earliest instance of a book being printed with a permission from the Government occurs in the year 1748; and that the oldest mandate for appointing a censor of books was issued by Berthold, archbishop of Mentz, in 1486.

CENSUS. The first mention in history of a census or numbering the people of any nation, is that of the Israelites, under Moses, soon after their deliverance from the Egyptians. The census was established at Rome by King Servius Tullius, who directed that it should be taken every fifth year.

CHAINS of Gold were formerly considered as emblems of authority—hence the custom of investing the Lord Mayor of London with one. The Romans in their wars carried with them a number of chains, destined for those who might become their prisoners: they had them made of different metals; a great many of iron; others of silver; and some even of gold, which were distributed and made use of according to the rank and quality of the prisoners:

It is related by Polybius that the multitude of the people who followed the army of Flaminius in his march against Hannibal, exceeded the number of fighting men, and that they carried with them chains and fetters to secure their captives, but were themselves defeated. In the middle ages we read of fetters of silver for kings and princes.

CHAIR. The Asiatics, even to this day, make no use of chairs, but sit either on the ground or on cushions; and although chairs were not unknown to the ancient Greeks and Romans, yet they were seldom used but on state occasions, or by people of rank. The curule chair was made or adorned with ivory, and was introduced into Rome by Tarquin, from

Viterbo, in Etruria ; two of them made in the shape of our portable folding chairs or letter X, about one foot high, and eighteen inches broad, were discovered at Herculaneum. The chairs or cathedræ of the Roman ladies were distinguished from those of the men, by being adorned with cushions and embroidery.

The Anglo-Saxons had rich curule chairs of state, similar to the Romans ; and wooden and rush-bottom chairs were common.

The *Sedan* chair was first made use of by the Duke of Buckingham, in the reign of James I., to the great indignation of the people, who exclaimed that he was employing his fellow-creatures to do the service of beasts. A licence for letting them out was granted to Sir Saunders Duncomb in 1634.

CHAIRING. It was an ancient custom among the northern nations, to elevate their king upon his election on the shoulders of his senators ; and the Anglo-Saxons carried their king upon a shield when crowned. Priests, on being appointed bishops, were elevated in their cathedra.

CHAMBERLAIN. The office of Lord Great Chamberlain of England is of great antiquity, and was hereditary in the earldom of Oxford in the time of Henry I. ; and afterwards, by marriage, settled in the family of the Duke of Ancaster.

The Gentlemen of the Privy Chamber, under the name of Esquires of the Household, are noticed in the reign of Edward IV.

CHAMPION of England, an officer of great antiquity, probably co-eval with the Conquest, whose business is to challenge any one who may dispute the title of the king at his coronation, in Westminster-hall. In the time of Richard II.

this office was performed by Sir John Dymocke, who claimed it as a descendant of the family of Marmions, who held the manor of Scrivelsby in Lincolnshire by grand serjeantry, on the condition that the lord thereof should be the king's champion.

This manor, in the compiling of Domesday Survey, called Scriveleslin, was holden by Robert de Spenser, but by what service is not stated : it shortly afterwards was granted to Robert Marmyon, whose male descendants enjoyed the same till the year 1292, when Philip, the last Lord Marmyon, died, seized of this manor, holden by baronry, and the service of champion to the kings of England on their coronation day : he was also possessed of the manor of Tamworth in Warwickshire. This Philip left only female issue ; and his great estates in Warwickshire, Leicestershire, and elsewhere, were divided between them. By this partition, the manor and barony of Scrivelsby were allotted to Jean, the youngest daughter, by whose grand-daughter and heir the same passed, in marriage, to Sir John Dymocke, who, with Margaret his wife, had livery thereof in the twenty-third year of Edward III.; and the manor of Tamworth, &c., went with the eldest daughter of Philip Lord Marmyon, from whom Baldwin Ferville was descended, and who, at the coronation of Richard II., unsuccessfully disputed the title of champion with Dymocke, whose male descendants still enjoy that honour, and one of them appeared as champion at the coronation of the present king.

CHANCELLOR. This officer, among the Romans, was a kind of secretary, who, in process of time, became invested with several judicial powers. Gibbon states that under the emperor Carinus, one of his door-keepers, with whom he entrusted the government of the city, was denominated *cellarius* ; and from this humble original, the appellation has, by a singular fortune, risen into the title of the first great

office of state in the monarchies of Europe. From the Roman empire it passed to the Roman church, ever emulous of imperial state; and hence every bishop has to this day his chancellor, the principal judge of his consistory. Afterwards, when the modern kingdoms of Europe were established upon the ruins of the empire, almost every state preserved its chancellor, who generally had the charge of all such public instruments as were authenticated, in the most solemn manner; and therefore, when seals came into use, the custody of the Government seal was confided to him; and hence, to this day, the power and rank of the Lord High Chancellor of England is at once constituted and cancelled by the mere delivery or resignation of the king's great seal.

Polydore Virgil states, that Maurice, Bishop of London, in the reign of William the Conqueror, was the first person invested with the dignity of Lord Chancellor of England; and this honour, with the exception of the appointment of Sir Robert Burgchier or De Bouchier to the office by Edward III. in 1341, seems to have been exclusively enjoyed by the clergy till the time of Elizabeth, when Sir Thomas More in 1533, and afterwards Sir Nicholas Bacon in 1559, were appointed *Keepers* of the Great Seal, (this being the usual title in her reign); since which period there appears but one instance of a clergyman being appointed chancellor or keeper, who was Dr. Williams, Dean of Westminster, and afterwards Bishop of Lincoln, by James I., in 1621.

Previous to the reign of Elizabeth the office of Lord Chancellor and Lord Keeper occasionally subsisted at the same time in different persons; and sometimes the Lord Chancellor had a *Vice-Chancellor*, who was Keeper of the Seal.

Commissioners for executing the office of Lord Chancellor were first appointed in 1689.

Masters in Chancery were anciently called clerici, from their being in holy orders. The first reference made to a master

in chancery is stated to have been in the year 1588, when Sir Christopher Hatton was chancellor.

The Master of the Rolls in the time of Richard II. was stiled Clerk of the Rolls. The title of Master was assumed in the reign of Henry VII.

CHANTING. This method of performing the church service was introduced by St. Ambrose. St. Gregory, or according to others, St. Hilary, directed that a certain number of chanters or choristers should form a part of the church establishment. In the middle ages, kings, upon certain festivals, used to join in the service, and sing the offices in surplices.

CHAPEL. Rebaff states that it was formerly the custom with the kings of France, when engaged in war, to carry into the field the chape or cape of St. Martin's as their standard, and that this was kept in a tent, as a precious relic, under the charge of some priests—hence the tent was called *capella* or *chapel*, and the priests *capellani* or *chaplains*. In the eleventh century the noblemen were reproached with multiplying their domestic chapels: most, however, of the private chapels were discontinued at the reformation; and few noblemen in the reign of Charles I. maintained any domestic chaplains.

CHAPLETS, or Strings of Beads, are said to have been first used by Peter the hermit, who by his exhortations established the crusades against the infidels: rosaries are however common among the Brahmins in India, and also among Mahometans: it is therefore not improbable that the custom of wearing them was brought from Palestine.

CHART. Hydrographical maps or charts were first introduced into the marine by Henry, Duke of Visco, son of John I., king of Portugal, about the year 1400, and greatly improved

upon by Gerard Mercator in 1556, who published a chart, in which the meridians and parallels of latitude were straight lines, as in the plane chart ; but in order to compensate the errors arising from the parallelism of the meridians, he increased each degree or portion of the meridian, with its distance from the equator : the discovery, however, of a fixed rule for dividing this enlarged meridian, was left to Wright, an Englishman, who, in 1590, constructed his "Table of latitudes for graduating a meridian in the general Sea Chart, to every degree and minute of the quadrant," which has since obtained the general name of a "Table of Meridional Parts."

CHEESE. The method of preparing this kind of food from milk is stated by Hippocrates to have been discovered by the Scythians at a very early period. Virgil describes it as the common food of the Roman shepherds.

CHEMISTRY. The wants of mankind in the early ages of the world must have led them to the acquirement of a certain degree of chemical knowledge. Thus we read in sacred history that Tubal Cain was a worker in iron and brass. The Egyptians in the time of Pharoah are mentioned as a flourishing and civilized people, and acquainted with most of the arts which contributed to the conveniences and embellishments of life : but although many chemical arts, such as metallurgy, pharmacy, dyeing, &c. can boast of very high antiquity ; yet this knowledge, as it consisted chiefly of a number of scattered unconnected facts, can scarcely be dignified with the name of science. The conquests of the Saracens in the seventh and eighth centuries, destructive as they were to the religion and civilization of those countries which they occupied, seem nevertheless to have given a reviving influence to the long neglected studies of geometry, astronomy, and chemistry, and the innumerable discoveries resulting from

the attempt to convert the baser metals into gold, which for several centuries occupied the attention of chemists, materially contributed to reducing the science into a regular system. Beccher's work, entitled "*Physica Subterranea*," published in 1669, may be considered as the first regular treatise on the subject of chemistry, and consequently forms an important era in its history.

Towards the close of the seventeenth century several learned societies were established for the investigation of philosophical pursuits, and the science of chemistry had by these means been so greatly augmented, that the barbarous language which had been made use of by the Alchemists to veil their mysteries, and which was still retained, was found to be unintelligible and useless. To remedy this defect, the arduous task of constructing a new chemical language was undertaken by some French chemists in 1790; and to the publication of their new nomenclature by which every word and every combination has an appropriate meaning, so as at once to express the nature and composition of the substance which it represents, we are to ascribe the facility and precision with which the knowledge of chemistry can now be communicated, and which has so materially contributed to its general diffusion and cultivation.

Basil Valentine, a German monk, who flourished about the commencement of the fifteenth century, first applied chemical pursuits to the improvement of medicine, and in his celebrated treatise entitled "*Currus Triumphalis Antimonii*," many pharmaceutical preparations are noticed, which have since been announced to the world as new discoveries.

CHERRY. Lucullus, the Roman Consul, on his return to Rome from the Mithridatic wars, about 70 B. C., introduced cherries into Italy from Cerisus, a city of Pontus Cappadocius, on the Euxine sea, from which city the Romans named the fruit cerisum, and afterwards introduced it into this country.

CHESS. This game has been from time immemorial known in Hindoostan, under the name of Chatrunga, from whence it found its way into Persia, under the corrupted appellation of shatrunj. The Arabians were equally partial to it, and from them the method of playing it was acquired by the Crusaders and brought into Europe, where it seems to have been the favourite amusement till the introduction of cards. Boccau, who wrote in the fourteenth century, says there was a celebrated player at Florence, who (like Philidor) could beat two antagonists without seeing the board.

According to Ramsiens, the game of chess must have been very early played in England, for he states that when bishop Etheric obtained admission to Canute the Great, about midnight, upon some urgent business, he found the king and his courtiers engaged at play, some at dice and others at chess. Hyde supposes the game to have been known at the time of the Conquest, from the circumstance of the Court of Exchequer, so called from its having a chequered cloth on the table, being then established; but the Honorable Danes Barrington says it was introduced on the return of Edward I. from Palestine, soon after which it became a fashionable acquirement, and a knowledge of it was considered as a valuable accomplishment, there being no fewer than twenty-six English families which have chess-boards and chess-rooks emblazoned in their arms.

CHILTERN HUNDREDS. A range of hills extending from Tring in Hertfordshire, to Henley in Oxfordshire, the nominal acceptance of the stewardship of which, with a salary of twenty shillings and all fees, &c., under the gift of the crown, incapacitates any one from being a member of the House of Commons, and is therefore resorted to by those who are desirous of resigning their seats in Parliament.

CHIMNEY. Originally houses were built with an aperture in the roof for the smoke to escape; but the ancient

Greeks and Romans generally warmed their houses by stoves and braziers, in which they used charcoal, and threw perfumes on the wood to correct any unpleasant effluvia. The ancients had also a method of preparing wood to prevent its smoking, which Theophrastus states was by peeling the bark from the wood, and letting it lie afterwards a long time in the water, and then suffering it to dry, and likewise of scorching it over the fire, until it had lost its moisture, when it became fit for the brasiers or stoves, and was sold under the appellation of *tabernæ coctiliaræ*. Seneca says that *flues* were introduced at Rome when Nero was Emperor. Vitruvius makes no mention of chimnies or elevated funnels for conveying off the smoke, nor were any to be found in the houses discovered at Pompeii and Herculaneum: they are therefore supposed to be a modern invention, and to have been first erected in Italy, in the eleventh century, under the name of *Camini*. Beckman says that the oldest certain account of a chimney is from an inscription at Venice, dated in 1347, stating that several chimnies, *molti camini*, had been in that year thrown down by an earthquake.

In some of the old English castles the wall at the bottom behind each fire-hearth had a flue, which continued to rise sloping, till it reached a loop of exit almost the height of the room. Leland speaking of Bolton Castle, in the time of Richard II., says, "One thing I much noted in the hall of Bolton, how chimnies were conveyed by tunnels made on the sides of the walls betwixt the lights in the hall, and by this means and by no covers is the smoke of the hearth in the hall wonder strangely conveyed." Chimnies, therefore, seem to have originated in the halls of castles, but were not attached to private dwellings till about the time of Henry VIII.; they were common in the reign of Elizabeth, and apologies were made to visitors, if introduced into rooms which were merely warmed by chaffing-dishes or stoves.

CHIMNEY-SWEEPERS. According to Beckman, the

first chimney-sweepers in Germany came from Savoy, Piedmont, and the neighbouring territories ; and these were for a long time the only countries where the cleaning of chimnies was followed as a trade.

CHINA-WARE. The Chinese annals are quite silent as to the inventor of china, or even the period of its invention. The earliest historical notice of it is to be found in the annals of the province of Foca-lean, A. D. 442, which state that the workers of china in that district were alone entitled to the privilege of furnishing the imperial palace with it. This ware is called by the Chinese *tse-ki*, and by the Europeans, *porcelain*, from the Portuguese word, *porcelena*, a cup, and is principally manufactured at King-te-ehing ; and though attempts have been made to introduce it into Peking, Nankin, and other places, yet the porcelain in the new manufactories is by no means equal to that of the old.

From the great perfection in which we find the porcelain of China as far back as history extends, there is great reason to believe that many centuries must have elapsed in bringing it to that state, could we even ascertain when it arrived at its climax ; for it is remarkable that the oldest specimen of china does not yield in beauty, or differ in its essential qualities, from the most recent manufacture.

The Egyptians at one time had acquired the art of making china. C. Caylus mentions two porcelain statues of Isis, which were of the same colour within and without ; and both Scaliger and Cardan agree, that the myrrhine vases at Rome, which were first seen on the occasion of Pompey's triumph, and afterwards valued at a high price, were the porcelain of our times.

This kind of manufacture is supposed to have been brought into Europe from India or China by the Portuguese ; but the time is uncertain. The Venetians generally supplied Europe with it in the sixteenth century.

For several years back earthen-ware has been made in different parts of Europe so like the oriental, that they have acquired the name of porcelain,—the art of manufacturing which was discovered by John Botticher, a German, while apprentice to one Zorn, an apothecary, at Berlin. It is stated that Botticher meeting with an old acquaintance to whom he had formerly been of some service, he was in return initiated by him in the art of making gold; and under the impression that he was really possessed of this valuable secret, he ran away from his master into Saxony, where he was protected by the emperor, and had apartments allotted to him at Dresden for the purpose of prosecuting his experiments. In this place in the year 1706, having mixed various earths together to make his crucibles sufficiently strong and durable, he accidentally hit upon the method of making porcelain, and thus in a certain degree realized his expectations by introducing a ware of so valuable a nature.

China-ware was common in England in the reign of Elizabeth, and was imported by the East India Company in 1631. It was first manufactured in this country at Worcester in 1751; and the method of transferring impressions from *engraved copper-plates* to the surface of the porcelain was there discovered. It is not a little remarkable, that a considerable part of the export trade of the Worcester porcelain works, is to our settlements in the East Indies, and even to Canton: and the Chinese, who about a century ago furnished this country and all Europe with porcelain, are now excluded from our markets, and their extensive manufactories nearly ruined.

CHIVALRY. M. de Voltaire gives the following account of the origin of chivalry. When Europe, on the decline of the House of Charlemagne, had fallen into a state of anarchy and confusion, every proprietor of a manor or lordship became a petty sovereign, his house was converted into a castle, and

a number of armed men or followers retained, who under his command, were accustomed to make predatory excursions on the territory of the neighbouring chieftains, sometimes even attacking their castles, which they pillaged, and carried away the women in triumph.

During this state of universal hostility there was no friendly communication between the provinces, nor any high roads from one part of the kingdom to another: the wealthy traders who then travelled from place to place with their merchandize and their families, were in perpetual danger—the lord of almost every castle extorted something from them on the road; and probably some more rapacious than the rest seized upon the whole cargo: thus castles became the warehouses of all kinds of rich merchandizes, and the prisons of the distressed females whose fathers or lovers had been plundered or slain: but as some are always distinguished for virtue even in the most general defection, it happened that many lords insensibly associated to repress these sallies of violence and rapine, and the association was at length strengthened by a solemn vow, and received the sanction of a religious ceremony: by this ceremony, these lords assumed a new character, and became knights, and the fraternity was soon regarded with a kind of reverence, even by those against whom it was formed; and an admission into the order was regarded as the highest honour: from this time the knight devoted himself to the protection of the fair sex, and to the redress of those wrongs which were occasioned by acts of rapacity.

From this view of the origin of chivalry, it will be easy to account for the castle, the moat, and the bridge, which are found in romances; and as to the dwarf, he was the constant appendage to rank in those times. The principal lords who entered into the fraternity of knights, used to send their sons to each other to be educated, far from their parents, in the mystery of chivalry, and these youths till they

arrived at the age of twenty-one, were called *bas chevaliers*; or under knights, afterwards corrupted to *bachelors*.

During the reigns of John and Henry III. of England, the spirit of chivalry had greatly declined, but was revived under the Edwards; and till the close of the fifteenth century had a wonderful influence on the fate of nations and manners of mankind.

CHRISTIANITY. The followers of Christ, or the proselytes to his religion, from among both the Jews and Gentiles, were distinguished by various appellations: those which they generally appropriated to one another were brethren and disciples; but by their adversaries and the Gentiles they were called Nazarenes and Galileans. In consequence of the conversion of Cornelius and his family, the believing Jews and Gentiles were formed into one church; and in order to prevent their separation, the new name of Christians, from their divine master, was first given them at Antioch by the Romans in the year 44.

Though the exact time of the conversion of the Britons be uncertain, it is very probable the gospel was preached in the island soon after the death of Christ, and about the time of the victory of Claudius and the defeat of Boadicea; for at the time of this revolt there were in the island above 80,000 Romans, among whom (as the gospel had by this time got footing in many places, particularly at Rome) there must have been several Christians: upon this supposition, there is no absurdity in asserting, with several modern authors, that St. Paul preached the gospel in Britain; for it is allowed that this apostle, in the eight years between his first imprisonment at Rome and his return to Jerusalem, propagated the Christian religion in several places, especially in the western countries; and it is not unlikely but his desire of converting the Britons might carry him into their island: however, Christianity does not appear to have taken any deep root, and

was nearly extinguished when Lucius, a British king, in the second century, sent Elwan and Medwin, ambassadors to Pope Eleutharius, for some missionaries to instruct his people in the Christian religion, which ambassadors being baptized and consecrated bishops, were sent back, and by their means the gospel again flourished in Britain ; and during the persecutions of Dioclesian several of the Britons sealed their faith with their blood, among whom was St. Alban : but the religion was now too firmly established to be easily put aside ; and mention is made of three British bishops, supposed to have been those of London, York, and Caerleon, being at the Council of Arles in 314.

The Saxons on their first arrival in Britain thought it their duty to persecute the Christians ; and therefore little is known respecting church affairs in the south of Britain till the time of Ethelbert, king of Kent, who having married Bertha, a Christian, and daughter of Cheribert, king of Paris, gave free encouragement to the missionaries sent by Pope Gregory I. into England to instruct the English in the knowledge of the gospel : at the head of those missionaries, who were Benedictine monks, was Austin, abbot of St. Gregory's at Rome, who, landing in the isle of Thanet in the year 597, got permission to settle at Canterbury, and in the course of a year the king himself and many of his subjects embraced his doctrine ; in consequence of which, the queen's chapel, which stood without the city, became too little for their accommodation, and one of the heathen temples was therefore converted into a church, and dedicated to St. Pancrace : soon afterwards the foundations of Canterbury cathedral were laid, and dedicated to St. Peter and St. Paul.

Thus began the conversion of the Saxons in England, and a solid foundation was laid for the growth of Christianity in this country ; for although this religion, as we have seen, was partially introduced under the Roman Government, and several bishoprics were founded, yet the church laboured

under so many difficulties, that its history until this period is extremely vague and unsatisfactory.

CHRISTMAS. It is commonly maintained that Pope Telesphorus was the first who, about the year 130, ordered the feast of the Nativity to be held on the 25th of December; while, on the other hand, John, Archbishop of Nice, relates that Pope Julius, in 350, having procured a strict enquiry to be made into the day of our Saviour's Nativity, and ascertained that it happened on the 25th of December, directed that for the future the feast should be celebrated on that day; but, according to Benson, our Saviour was born in April or May of the Julian year 4709, and crucified on the 15th of April, 4742: thus it appears that Christmas day, which is, in truth, *unknown*, we have in our Liturgy rendered *certain*; and that Good Friday, which is historically *established*, is by us made of a fluctuating date.

Christmas-box. The Athenian Oracle states the origin of this custom as follows: the Romish priests had masses said for almost every thing: if a ship went out to the Indies the priests had a box in her, under the protection of some saint, into which the sailors were to put money for the masses said for their safe return, until which time the box was not to be opened: the mass at that time was called *christmass*, and the box *christmass box*. Servants also used to keep boxes for the purpose of paying the priests for masses, to absolve them from the debaucheries of the seasons.

The Christmas *carrol* which is generally sung on Christmas day and continues till twelfth day, is said to be in imitation of the "*Gloria in Excelsis*," sung by the angels on the morning of the nativity, and is of ancient standing in the church. Tertullian assures us it was customary among the Christians at their feasts, to bring those who were able to sing into the midst, and make them sing a song unto God, either out of the Holy Scriptures, or of their own composing.

CHRONOLOGY was first reduced into a regular science by Ephorus, the disciple of Socrates, about the year 350 B. C., though Erastosthenes, who superintended the Alexandrian Library, about 200 B. C., is considered the great father of chronology, which he commenced from the æra of the taking of Troy, 860 years prior to the death of Alexander.

Sir Isaac Newton has shewn that the chronology of ancient kingdoms is involved in the greatest uncertainty ; that the Europeans in particular had no chronology before the Persian Empire, which began 536 B. C., when Cyrus conquered Darius the Mede ; that the antiquities of the Greeks are full of fables, because their writings were in verse only, till the conquest of Asia by Cyrus the Persian, about which time Phericydes Syrius, and Cadmus Milesius introduced prose. After this time several of the Greek historians introduced the computation by generations. The chronology of the Latins was still more uncertain, their old records being burnt by the Gauls a hundred and twenty years after the expulsion of their Kings, or 388 B. C. The Chronologers of Gaul, Spain, Germany, Scythia, Britain and Ireland are of a still later date, for Scythia beyond the Danube had no letters till about A. D. 276, when Ulphilas, their bishop, invented the Gothic character, and Germany had none till it received them from the Western Empire of the Latins about the year 400.

CHRONOMETER. A time-keeper was first used for the purpose of ascertaining the longitude of a ship at sea by Gimma Foisius in 1530.

CHURCH. The term *ecclesia*, synonymous with our church, is used in the Greek and Latin profane authors for any kind of public assembly called together upon any public business ; and from several places, in which it is mentioned in the Sacred Writings, it appears that the congregation and not the place formed the scriptural idea of a church. Consi-

dering a church however, in the light of a christian temple consecrated to the service of the Deity, it would seem that the Christians in the first ages assembled for social worship in private houses and sequestered places. Tertullian and Eusebius inform us that they were frequently held in the cemeteries, and in the edict of Galian about the year 260, which conferred several privileges upon the Christians, cemeteries and places of worship are used as synonymous terms. It is the opinion of many learned men that the christians had no public edifices till after this edict, when they were permitted to erect and consecrate convenient edifices called oratories, for the purpose of religious worship; they were, however, soon afterwards demolished by the persecuting edicts of Dioclesian, and though in some places the magistrates contented themselves with shutting up the places of worship, in others they proceeded to a more severe extreme, and after taking away the doors, the benches, and the pulpit, which they burnt, they completely destroyed the remaining edifice. The christians were, therefore, again reduced to their cemeteries and other secluded places, for the performance of their religious worship; but when Constantine himself became a convert to the christian religion, several churches of considerable magnificence were erected at Antioch, Jerusalem, Alexandria, and Constantinople; and the word *temple* was then first introduced from the circumstance of many of the heathen temples being converted into churches. It is by many supposed that the church of St. Saviour at Rome founded by Constantine, was the first church publicly built by the Christians.

The first church in England, it is said, was erected at Glastonbury, at the commencement of the second century, and this tradition may seem to deserve credit because it was not contradicted in those ages, when other churches would have found it profitable to advance a similar pretension. The building is described as a rude structure of

wicker-work, like the dwellings of people in those days, and differing from them only in its dimensions, which were three-score feet in length, and twenty-six in breadth. Churches in the first ages were generally of a plain and simple structure, and the description given by our Venerable Bede of the church built by Finan, the second bishop of Lindisfarne, or Holy Island, furnishes a just idea of their simplicity.

The first stone church was built at Lincoln, by Paulinus in 628.

The *tower* was added to churches in the time of Alfred, though there are many Anglo-Saxon churches which, instead of a tower or steeple, have a small arch to cover two very small bells, whose ropes are let down into the church by holes through the roof, as at Stretton, Whitwell, Esendine, and others. The first appearance of *spires* occurs in the eighth century, when they were low and roofed with shingles; in the eleventh they occur in the form of cones or pyramids of carpentry, clothed with shingles or tiles; in the twelfth they begin to gain height; in the thirteenth they assume the tall modern form.

The round churches of this country appear to have been indebted for their origin to those who returned from the crusades: on whose minds the venerable form of the church of the sepulchre at Jerusalem had left a strong and durable impression; that of St. Sepulchre, Cambridge, is supposed to have been erected in the time of Henry I.

Camden says St. Martin's church, Canterbury, built entirely of Roman brick, was supposed the oldest christian church in Britain in his time, and Sumner believes it was the see of a bishop 350 years before Austin's arrival.

CHURCH Music. It appears from undoubted testimony that singing, which was practised as a sacred rite among the Egyptians and Hebrews at a very early period, and which likewise constituted a considerable part of the religious cere-

monies of the Greeks and Romans, made a part also of the religious worship of christians, not only before churches were built and their religion established by law, but from the first profession of christianity. Soerates, the historian, acquaints us that St. Ignatius, who conversed with the Apostles, first instructed the primitive christians of the East in the method of singing hymns and psalms, alternately, or in dialogue, and the custom soon prevailed in every place where christianity was established. However, the era of church music is generally supposed to be during the time when Leontius governed the church of Antioch, in the year 350, and that from Antioch the practice spread through the other churches of the East, and both chanting and instrumental music was considerably cultivated under Constantine the Great; but till this period, no specimens of the music employed by them is to be found. From Constantinople, both musical instruments and chanting were introduced into the western churches by St. Ambrose, Bishop of Milan, about the year 374, and was improved upon by Gregory the Great, who established the Gregorian chant, a plain unisonous kind of melody, which he thought consistent with the gravity and dignity of the service, to which it was to be applied, and which prevails in the Roman church to the present time.

The Venerable Bede informs us that when Austin and the companions of his mission had their first audience of king Ethelbert, in the Isle of Thanet, they approached him in procession singing litanies, and that afterwards when they entered the city of Canterbury, they sang a litany, and at the end of it Allelujah. But though this was the first time the Anglo-Saxons had heard the Gregorian chant, yet Bede likewise assures us that our British ancestors had been instructed in the rites and ceremonies of the Gallican church by St. Germanus, and heard him sing Allelujah many years before. St. Dunstan, who was himself an eminent musician, introduced organs into our churches and monasteries about the

B. C., had a method of carrying on a diplomatic correspondence by means of two rollers of wood, exactly resembling each other, called *scytala*; one of which was kept by the *Ephori*, and the other by the general commanding their army: when, therefore, they were desirous of transmitting any secret instructions to him, they took a slip of parchment, and rolling it accurately about the *scytala* which they had reserved, wrote their intentions, which appeared perfect and consistent while the parchment continued on the roller, but when taken off was maimed and unconnected, and could not be rendered intelligible unless rolled in the same manner upon the *scytala* in the possession of the general. Polybius states that *Æneas Tacticus*, who was contemporary with Aristotle, and has left several fragments on the duties of a general, was the inventor of writing with secret characters.

Trithemius, a Benedictine monk, who lived about the middle of the fifteenth century, is the first writer among the moderns who has treated upon the subject of corresponding by ciphers, in which he has been followed by Baptist Porta, and many authors of celebrity who have written on diplomatic affairs. This method of writing was very common in the commencement of the sixteenth century; though so late as the time of Lord Chancellor Bacon, it was considered as an aggravation of Earl Somerset's crime to employ secret writing; and in Bacon's charge against him he says "They made play of all the world besides themselves; so as they had ciphers and jargons for the king, queen, and all the great men; things seldom used but either by princes and their ambassadors and ministers, or by such as work and practice against, or at least upon, princes."

CITY. During the Saxon period all great towns were called burghs and cities indiscriminately: thus London was called Londonburgh, and the capital of Scotland, Edinburgh; but after the Conquest the term, city, was confined in this

country to such corporate towns as had a bishop and a cathedral church ; therefore Cambridge, in all the public acts of Henry VII., is only called a town. Westminster having been once a bishop's see, retains its title and privilege of sending citizens to Parliament.

CIVIL LAW. Papirius, soon after the commencement of the republican form of Government, is noticed as having made the first collection of the Roman laws, to which were afterwards added the laws of the twelve tables, so named from their being drawn by the decemviri from the laws of twelve of the principal cities of Greece. Justinian, about the year 527, made a general collection of the whole Roman jurisprudence ; and it is owing to the accidental discoveries of his " Digests," which were found at Amalfi, in Italy, about the year 1130, that his laws were again established in the Roman empire, and other nations on the continent. Theobald, Archbishop of Canterbury, in 1138, introduced the study of the Roman or civil law in the University of Oxford, which for many ages was pursued with considerable alacrity by the clergy, who in those days of bigotry despised the common law of the country, esteeming it little better than heretical. The struggle between the laws of England and of Rome was continued from the time of Henry II. to Edward I., when the common law became more firmly established ; and though the civil law is still used in the Ecclesiastical Courts, and in the High Court of Admiralty, yet it is restrained and directed by the common law.

CLERGY: On the commencement of our Saviour's ministry, his immediate followers and attendants were denominated disciples, who formed a kind of priesthood for the further promulgation and dispersion of the gospel among the Jews and Heathens : from these disciples twelve were selected, who, under the appellation of apostles or delegates, were

gifted with supernatural powers to propagate the Christian religion in foreign countries.

It has been conjectured that St. Paul began to establish episcopacy, immediately after his release from his first confinement at Rome ; and that in the apostolic period there were three distinct orders in the church, viz. : bishops, priests or presbyters, and deacons ; though the presbyterians maintain that in the time of the apostles, the terms bishop, and priest, were synonymous. However, towards the close of the second century, a notion prevailing that the ministers of the Christian church succeeded to the rights and privileges of the Jewish priesthood, a subordination of rank was consequently produced among them ; and we soon afterwards meet with patriarchs, exarchs, archbishops, metropolitans, &c. ; and in the third century the distinction between the clergy and the laity was established ; though it does not appear that the common or untitled clergy had any peculiar habits as distinct from the laity till the middle of the fourth century.

Sincius, Bishop of Rome, in 385, endeavoured to make all the clergy throughout the western world renounce the privilege of marriage, extolling *celibacy* as the indispensable duty of priests, which however did not pass into a law till the time of Gregory the Great in 591 ; and though an attempt was made to free the clergy from this yoke at the period of the Reformation, it proved unsuccessful ; and the celibacy of the clergy is still deemed essential in all Catholic countries. In the middle ages the wives of the clergy received the opprobrious epithet of concubines.

The clergy of England were subject to the same laws and entitled to the same privileges, as those in Italy and France, till the arrival of William the Conqueror, who first made them subservient to secular power, directing that the mitred bishops and abbots should hold their lands according to the feudal principles of contributing their proportion of military

aid and personal attendance at the king's councils : and mention is made, that in the reign of Edward III. the clergy assembled themselves at Berwick, and with their heads uncovered, and without shoes, armed with swords, and bows and arrows, marched against the Scots, singing psalms.

A convocation or general assembly of the representatives of the clergy was first summoned to meet, at the same time as the Parliament, by writ of Edward I., for the purpose of consulting on ecclesiastical affairs ; and this continued to be the practice till the year 1717, when in consequence of its improperly connecting itself with the Bangorian controversy, it was prorogued, and dissolved by a special order from the king, and has never since transacted any public business.

The clergy had formerly representatives of their own in the House of Commons ; but from a desire of independence on the state, to which they were incited more and more by the Pope, they gradually withdrew themselves from any attendance in Parliament, either personally or by representatives ; so that after the reign of Henry VI. they are hardly ever mentioned as present there ; but they nevertheless seem to have reserved the liberty of taxing themselves in their house of convocation. In the reign of Edward VI. an attempt was made to have the lower house of convocation united to the House of Commons, *according to ancient custom* ; but this was rejected by Elizabeth ; and upon the restoration of Charles II. the clergy voluntarily agreed to be taxed in the same manner as the rest of the Commons, and have ever since been represented in Parliament by the same persons.

The *benefit of clergy* was an indulgence granted to the church in its infant state, whereby the persons of clergymen were, in particular cases, exempted from criminal process before the secular judges, which privilege, originally confined to those who had the *habitum et tonsuram clericalem*, was, in process of time, extended to every one who could read, though unconnected with the church ; so that after the inven-

tion of printing, and the dissemination of learning, this became a very comprehensive test, including laymen as well as divines : in order therefore to render the law impartial, the benefit of clergy was granted by the 5th of Anne to all who had a right to ask it, whether they could read or not. The first verse of the fifty-first psalm, *Miserere mei, Deus*, was the verse given to the prisoner on this occasion, which was therefore called the *neck verse*.

An institution for the relief of the families of the clergy, since entitled the *Corporation of the Sons of the Clergy*, originated during the Commonwealth ; and sermons for promoting it were preached at the anniversary meetings at St. Mary le Bow soon after the Restoration, if not before that event. In 1697 the anniversary meeting was first held at St. Paul's ; since which the annual sermon has been accompanied with a grand musical service, in further aid of the charity.

CLERKS. During the dark ages of ignorance in the western part of Europe, consequent on the subversion of the Roman empire, there were few, except those of the church, who were capable of carrying on a correspondence, or recording passing events ; so that the princes and barons were under the necessity of employing *clerici* or *clerks*, as secretaries and registers, which appellation has continued to this day.

CLIMACTERIC. Aulus Gellius states that the idea of certain critical years in a person's life is of considerable antiquity, being attributed to Pythagoras, whose philosophy turned much upon numbers : we find it adopted by the Romans ; as Suetonius informs us that Augustus congratulated his nephew upon his having passed his first grand climacteric ; and even St. Augustin, Ambrose, and the early fathers, countenanced this superstition.

CLOCK. In the middle ages the appellation, *horologium*, was indiscriminately applied to all instruments that had any thing to do with hours, whether regulated or not; such as clepsydræ, sun-dials, and instruments like our planetaria and orreries for representing the motions of the heavenly bodies, and lastly to clocks. The most ancient machine for measuring the different portions of time was the *clepsydra*, which is said to have been invented by Thoth or Mercury, and was in common use among the Egyptians, Greeks, and Indians: this machine was put into motion by water, and at first was merely a copper cup or bason, having a small hole in it, which being placed in a vessel of water, sunk, after a certain quantity of it had been received: this method is still practised in India, and the portion of time thus marked out, which is about twenty minutes, is called a *gurhee*. The Greeks improved on the principle, introducing wheel work, which being put into motion by water, the different portions of time were more regularly ascertained. These kind of clepsydræ were introduced into Rome by Scipio Nasica about 150 B. C., previous to which the Romans had no other method of ascertaining the progress of time than by the sundial set up by Papilius Cursor, about 293 B. C.

The word, clock, is derived from the French, *la cloche*, a bell, from its indicating the hour by striking against a bell. Some maintain that clocks were invented by Boethius in the commencement of the sixth century; and that Pope Paul I., about the year 760, made a present of one to Pepin, King of France, which was then supposed to be the only clock in the world; others give the honour to Pacificus, Archdeacon of Verona, in the ninth century; and Professor Hambergan, in a paper read before the Society of Gottingen in 1758, says that the striking part was invented by the Saracens. It is certain that a curious clock was sent to Charlemagne from the Caliph Haroun 'l Raschid, which the historians of the time speak of with surprise and admiration: but it is now

generally admitted that the above horologies were put into motion by water, and were therefore clepsydræ, and that the striking part was added in the eleventh century, and is of monastic origin, or at least intended first for monastic purposes, when the stated periods of prayer required the attendance of the monks by night as well as by day. Mention is made of a clock having been put up at Westminster in the year 1288, during the reign of Edward I., at the expence of Rodolphus de Hingham, Chief Justice of the King's Bench, who, for some misdemeanour, had been fined eight hundred marks ; and which clock, in the time of Henry VI., was kept in repair by the Dean of St. Stephen's, who was allowed sixpence a-day for that purpose : but the antiquity of this clock does not appear to be satisfactorily established ; and in fact the earliest account we have, upon which any reliance can be placed, of a clock or machine put into motion by a gravitating power, and regulated by an opposing one, is that made by Henry de Wyck or Henri de Vic, a German artist, in 1364, and placed in the tower of the palace of Charles V. of France, a particular description of which has, on account of its antiquity, been published, from which it appears that the maintaining or gravitating power of this clock was regulated by a balance, having moveable weights attached to it, which balance was connected with the escapement wheel. This clock struck the hours, but did not notice so small a portion of time as minutes.

According to Dr. Durham, the oldest English clock extant is in a turret of the royal palace at Hampton, constructed in the year 1540, by a maker whose initials are N. O.

The substitution of a *spring* in lieu of a gravitating power forms a very important æra in the history of horology ; for to this discovery we are indebted for our *portable clocks* and *watches*. The honour of the invention is undoubtedly due to the Germans ; but the period is uncertain : it would seem however that at first the arbor of the main spring was con-

nected with the great wheel, and the power of it regulated by another spring, called by the Germans, *stack freed*, which, by some means opposed the force of the main spring when immediately wound up, but assisted it as its power began to relax ; and that this auxiliary spring was afterwards relinquished for the more scientific introduction of the fusee, which is connected to the barrel of the main spring by a chain, and being of a conical form, accommodates itself to the force of that spring, by diminishing its resistance to it as its radius or lever increases from its apex to the base.

The earliest portable clock, of which any account has been given, is one dated in 1525, made by Jacob Lech, of Prague, and some years ago in the possession of William Beckett, a clock-maker of London ; it had a spiral spring, with a fusee of soft metal, and struck one at the end of every hour.

The isochronal properties of a *pendulum*, and its utility in horology, seem to have been first noticed by the celebrated Galileo in his work, "*L' Usage du Cadron ou de l' Horloge physique universelle*, 1639 : " but the honour of having first practically applied the pendulum to clocks in lieu of the balance was long contested between Galileo and Huygens, both of whom made clocks on this principle in 1650 : it appears however from an engraved plate, suspended in the vestry room of St. Paul's church, Covent Garden, that the clock fixed in the turret of that church, previous to the fire, had a long pendulum attached to it, and was made by Richard Harris, of London, in 1641, which was eight years prior to that made by Galileo. The *anchor pallets* were introduced by Clement, in 1680, as also the custom of suspending the pendulum from a cock by means of a piece of watch-spring. The *mechanism of repetition*, by means of pulling a string, was invented by Barlow in 1676. The *endless chord*, to continue the clock in regular motion during the time of winding up, was invented by Huygens in 1660 ; but this was afterwards more readily effected by Harrison, by

means of his auxiliary spring and additional ratchet. Huygens was also the contriver of the present dial work for changing the hour into sixty minutes, by the addition of a hand in the centre of the clock's face.

Clocks were applied to the *purposes of astronomy* so early as 1484; and in 1530, Gemma Frosius, an astronomer, first suggested their use at sea for ascertaining the longitude.

Musical or *chiming* clocks were most probably invented in some of the monastic institutions of Germany. Burney notices them so early as 1580.

From the above concise account of the origin of clocks, it is evident they never could have been invented by any one person, but must, as Ferdinand Berthaud observes, be the result of successive discoveries.

The earliest mention of a *watch* is that said to have belonged to Robert Bruce, King of Scotland, of which the following account is given by the Honourable Danes Barrington: "Seven or eight years ago some labourers were employed in Bruce castle in Fifeshire, where they found a watch, together with some coin, both of which they disposed of to a shop-keeper of St. Andrew's, who considering the watch as a curious piece of antiquity, sent it to his brother in London: the outer case is of silver, raised, in rather a handsome pattern, over a ground of blue enamel; and I think I can distinguish a cipher of R.B., at each corner of the enchased work: on the dial-plate is written, *Robertus B. Rex Scotorum*, and over it is a convex transparent horn, instead of the glasses which we use at present: now Robertus B. Rex Scotorum can be no other King of Scotland than Robert Bruce, who began his reign in 1305, and died 1328; for the Christian name of Baliol, who succeeded him, was Edward, nor can Robertus B. be applied to any later Scottish king." There can be no doubt however that Barrington was imposed upon by some designing man; for we have no account of watches for near two centuries afterwards, when

the Germans reduced the portable spring clock into the size of a watch ; but the exact time cannot be ascertained.

According to some, Lewis XI., of France, who died about the year 1483, is first noticed as being possessed of a watch ; others however maintain they were not known till the time of the emperor Charles V. : it seems however they were common in France in 1544 ; and that the corporation of the master clock-makers in Paris had at that time the exclusive privilege of making *clocks, alarums, and watches*, large or small, within the city. Beckman informs us that in Sir Aston Lever's museum was a watch made in 1541 ; and Durham in his "Artificial Clock-maker," published in 1714, mentions a watch of Henry VIII., which was still in order. In the time of Elizabeth watches were suspended to the neck or attached to bracelets. In Shakespeare's "Twelfth Night," Malvolio says, "I frown the while, and perchance, *wind up my watch*, or play with some rich jewel : " they must therefore at that period have been generally known in England ; but the hours were not then divided into minutes ; and cat-gut supplied the place of a chain : they were consequently but indifferent measures of time till the introduction of the *balance spring* in 1658, which became to the balance what gravity is to the pendulum. The priority of this invention was for a considerable time disputed between the rival mathematicians, Huygens and Dr. Hook, but is generally attributed to the latter.

It would seem that watches were made to strike the hour almost from the period of their invention ; for it is stated that Lewis XI. having his watch stolen from him in a crowd, the thief was detected from its striking the hour : the same circumstance is also related of Charles V. ; and therefore little reliance can be placed on these statements ; but it is very probable that the early watches were in fact but very small clocks : striking watches are however noticed in the time of Elizabeth.

The *repeating* power which in 1676 had been given to the portable clocks by Barlow, led other artists to invent various ways of effecting the same purpose : but its application to pocket-watches was not known before the time of James II., when it is related Barlow solicited a patent for the same, but was opposed by a watch-maker, named Quare, on the ground of priority of invention ; the consequence was that the parties were directed to produce their watches before the king in council, who decided in favor of Quare : the difference between them was that Barlow's was made to repeat by pushing in two pieces, on each side the watch-box, one of which repeated the hours and the other the quarters ; whereas Quare's was made to repeat by a pin, which being thrust in (as is now done by pushing in the pendant itself), repeated both the hour and quarter at once. The repeating motion is by some called the *Stockton* motion, from the improvements given to it by a clock-maker of that name, who worked under George Graham, the successor to Tompion ; others call it the *French* movement, in consequence of the French having laid claim to the invention.

CLOTH. The inventions of weaving and spinning, like many others, most probably originated from some accidental circumstances, for weaving, when reduced to its original principle, is nothing more than the interlacing of cross and parallel threads ; the first cloth was, probably, made from rushes, or the slender stalks of plants, and is now called *matting*, which is still worn by rude and savage nations ; thus we find that the art of weaving was prior to that of spinning, and when it was discovered that the delicate and short fibres which animals and vegetables afford, could be so firmly united by twisting, as to form threads of any required length and strength, the manufacturing of cloth commenced ; but it is impossible to ascertain the period when this was effected ; though it must have been known to the Antediluvians, for

garments of various kinds of thread, and even the ornamental parts of dress, are particularised by Moses as being in use soon after the deluge, and he speaks of them without the least indication of their novelty, or the most distant hint that the manufacturing of them was a recent invention.

The Egyptians, who from their early state of civilization, lay claim to the invention of almost all the useful arts, state that their Goddess Isis was the inventress of weaving; and Herodotus assures us, that, contrary to the custom of other nations, the men were left at home to spin and weave, while the women were employed abroad in trade and business, and it is certain that both linen and woollen garments were in use among the Egyptians at a very remote period. "Vestures of fine linen" were worn by the superior officers of Pharaoh's court, as early as in the time of the Patriarch Joseph.

Wool and cotton were also anciently used in the manufacture of cloth, and probably from their being natural productions, preceded linen, made from the fibrous parts of plants, for we find by the Mosaic law, it was strictly forbidden to intermix *linen* and *woollen* threads in the making of cloth; and although the word cotton is not to be found in any ancient author, there can be no doubt but that the bombyx, which has been improperly translated silk, is the common cotton tree of the East.

The manufacturing of cloth from the hair of animals is also of great antiquity, the external covering of the tabernacle being made of goat's hair.

CLUBS. Social meetings somewhat similar to the modern clubs were common among the Greeks, as were also those called *benefit clubs*, having a common chest or bank for the relief of members in distress; in this country they are noticed during the Saxon government under the denomination of *Gilds*. A Saxon manuscript in the Cottonian library

contains the constitution of a Gild or Sodalites, by Hicks called a friendly or benefit club, which was established at Cambridge. In Alcock's treatise on the poor laws, published in 1752, mention is made of a number of benefit clubs, as existing at that period in the West of England.

COACHES, or covered carriages, are said to be the invention of Erectorius, the fourth king of Athens, about 1400 years before Christ; the use of them must be of very ancient date in India, as well as in the greater part of Asia, from the circumstance of its being considered a great disgrace for a woman of rank to be seen by a stranger, while at the same time it was customary for them to accompany their husbands in their military expeditions. Coaches were introduced into Rome about the commencement of the Christian æra, and carriages resembling our post chaises drawn by two horses, the driver sitting upon one, are seen upon the paintings of Herculaneum. The continued wars in which the Romans were engaged with the Goths and Vandals, during the latter part of their empire, rendered it effeminate to be seen in a covered carriage, and afterwards the spirit of the feudal system totally banished the use of them.

The invention of the modern coach is claimed by the Hungarians, even to the very name: they inform us that the place where coaches were first made was called Kotsee, and that king Matthias Cervinus was the first who rode in a kochy carriage, but the time is not mentioned. In an edict published by Philip the Fair of France in 1294, he directs, with a view of suppressing the luxuries of that period, that the wives of the citizens should be prohibited the use of carriages, consequently they must have been at that period common in France; though it was for a long time considered disgraceful for men to ride in carriages, and it seems that in the event of sickness, noblemen used to solicit this permission from their sovereigns; we find them, however,

made use of by the emperors and princes themselves on journeys, about the middle of the fifteenth century, and on the occasion of public solemnities so early as 1433, when Don Ambrose Trevasi made his public entry as ambassador into Mantua in a coach; and in 1475, the Emperor Frederic III. visited Frankfort in a very magnificent covered carriage.

The first mention of a carriage in this country is that stated by Sir William Dugdale in his history of St. Paul's, to have been used by St. Eokenwald about the year 675, for conveying him (who was lame and infirm) from place to place to preach; and Stowe relates that the ladies of England at an early period made use of a kind of open cars, called Whirlicotes. When Richard II. was obliged to fly from his rebellious subjects, his mother rode in a carriage; and the Queen of Henry VI. was discovered in her chariot after the battle of Tewkesbury, in 1471. In 1487, on some state occasion, the Queen of Henry VII. and the king's mother, rode in a chaise covered with a rich cloth of gold, drawn by six coursers, also harnessed with the cloth of gold, and accompanied by twenty-one ladies, habited in crimson velvet, on white palfreys: but Stowe states that Walter Rippon made a coach for Henry Fitz Allen, Earl of Rutland, in 1555, which was the first, in the modern form, that was ever used in England; and that in 1564 the same Walter made the first hollow turning coach, with pillars and arches for her Majesty, Queen Elizabeth; Guyllyam Boonen, a Dutchman, being appointed the Queen's coachman, who, by his skill in driving, contributed very much to the general introduction of coaches among the nobility. The coaches used at this time had a canopy supported by ornamented pillars, and the body was surrounded by curtains of stuff or leather, which might be drawn up as occasion required; but the weight of them, the clumsiness of their construction, being without springs, and the state of the roads, prevented their being commonly employed in journeys even by ladies, for Queen Elizabeth rode from London to Exeter behind the

Lord Chancellor, and even towards the close of the seventeenth century, the highways in the immediate vicinity of London, were in such a neglected state, as to render it almost impracticable for vehicles of any description to be driven upon them. It was a long time before the coach box was added to the body of the coach; for Strutt says "the coachman joineth a horse fixed to match a saddle-horse to the coach-tree, then he sitteth upon the saddle; and when there are four horses, he drove those that went before him, guiding them with a rein."

Coaches with glass windows are first noticed in 1631, when Mary, Infanta of Spain, the wife of the Emperor Ferdinand III., rode in a glass carriage, in which no more than two persons could sit: that they were not invented earlier is probable from the circumstance, that if the coach of Henry IV. of France, who was assassinated in 1610, had been furnished with glass, he would have been saved.

It cannot be exactly stated when the method of suspending the body of the carriage from elastic springs was discovered, but the coach in which Lewis XIV. made his public entry into Paris, about the year 1643, appears to have been of this construction.

The Duke of Buckingham, in 1619, was the first person who attached six horses to his carriage; in ridicule of which the Earl of Northumberland had eight.

The first state coach noticed in our history, was the one made for Charles I., which was of crimson velvet, adorned with gold.

Hackney-coaches receive their appellation from their being first set up in the village of Hackney, for the accommodation of such who had any business in the metropolis. These coaches began to ply in the streets of London, or rather waited at the Inns, in the year 1625, they were twenty in number, and under the superintendence of Captain Bailey, an old sea officer.

Formerly the common method of travelling was on horse-back, accompanied by a courier or guide, but about the year 1564 long waggons were introduced, and continued till the introduction of *Stage-coaches*, mentioned by Wood in his *Diary* to have commenced running in the year 1661, and he informs us that about six years afterwards, he travelled from London to Oxford by such a conveyance, the journey occupying two complete days. A coach was afterwards set up called the "Flying Coach," which completed the same journey in thirteen successive hours, but it was found necessary to discontinue it during the winter months.

COAL. It would appear from the writings of Theophrastus that this mineral substance was known to the Greeks, and used by their artificers as fuel about 300 B. C.; but no notice of it is taken by the Romans, unless it is the lapis amphilites which they manufactured into toys, nor are there any beds of coal to be found in Italy.

It is highly probable that the Britons were acquainted with the use of coal long before the arrival of the Romans, particularly within the precincts of Manchester, which are furnished with an inexhaustible abundance of it; and that the Romans themselves established a colliery at Benwell, near Newcastle. Whitaker assures us that coals were used as fuel in this country by the Saxons, though no notice is taken of them by the Danes, nor even by the Normans, till about the year 1234, when Henry III. confirmed the charter of his father to Newcastle, and gave the townsmen licence to dig coals and stones in the common soil, without the walls called the Castle-Moor; but the use of them seems to have been principally confined to the neighbourhood of Newcastle, for wood continued to compose the general fuel, at least so long as the forests and thickets afforded an ample supply for that purpose.

In the time of Edward I. sea coal was in much request in

several of the city trades, though it was soon considered as a nuisance, and prohibited as prejudicial to the health of the people; nevertheless these trades, observing the scarcity and price of wood daily to increase, conceived it was still their interest to use sea coal, notwithstanding the prohibition, they therefore, continued the trade with Newcastle; and in 1376 we find a regular duty of sixpence a ton on all coals brought from Newcastle, soon after which coals were used as fuel in the royal palaces.

In the middle ages coal was generally known under the name of *carbo*, which was also the term for charcoal; and, Fleetwood conjectures that whenever coals are mentioned in old accounts, we are to understand charcoal and not sea coal, which was brought into common use in London about the middle of the sixteenth century, and this most probably is correct, for the epithet *marinus* is generally added to *carbo* when sea coal is intended, as in the wardrobe accmpts of the 28th of Edward I., 1300, where *carbones marini* occur among the garrison stores of Roxborough Castle; that wood and charcoal was, however, in common use in houses in the middle of the seventeenth century, appears from an order in council by Cromwell, recommending *coke* for fuel, that the timber requisite for ship-building should not be encroached upon. The method of extracting the bituminous quality from coals had been discovered by John Hacket, in 1627, who obtained a patent for rendering coals as useful as wood for fuel in houses, without damaging the furniture, or incommoding the inhabitants with smoke.

COCHINEAL. That species of the insect kermes called the *coccus ilicis* by the Romans, from its being found on the low evergreen oak of Asia, was used as a dye by the Egyptians, in the time of Moses; and Pliny states that the Romans received it by way of tribute from Spain, where it was also produced in considerable quantities. Soon after the

discovery of America by the Spaniards, it was found that the Mexicans made a similar use of the kermes for dyeing their cloths and painting their houses; and that the properties of the cochineal of South America were so incomparably superior to those of any other dye, for its brilliancy and durability, that the monopoly of it was considered by Spain as extremely important.

From the common appearance of the kermes in its dried state, it was formerly imagined to be the berry or an excrescence of some vegetable: and that Pliny was of this opinion is evident from several passages in his writings. Plumier, a Jesuit, was the first who wrote the natural history of the kermes, and the method of collecting and extracting the dye from them, which he forwarded to Paris in 1692; and in 1756, Rolander, one of the scholars of Linnæus, sent him an American plant with the insects upon it, but the gardener, unacquainted with the nature of the present, had, to the great mortification of Linnæus, swept off the vermin, as he called it, previous to his planting the shrubs. An unsuccessful attempt was also made to introduce it into St. Domingo, in 1777.

The kermes being now considered as a worm, the dye from it was named *vermeil* by the French, hence its derivative *vermilion*. Anderson, however, in his History of Commerce, states, that he had ascertained that the insect was in all respects the same as our British lady-bird, and that it was purely by the insects feeding on the fine red juice of the Mexican shrub, that it acquired its superior excellence.

The Mexicans, according to Herrera, the Spanish historian, made use of *alum*, as a mordant for fixing the cochineal dye, which was also the general custom in Europe, till the commencement of the seventeenth century, when Drebbel, the celebrated German chemist, discovered the effect of the solution of tin in improving the dye. It is related that having placed in his window an extract of cochineal, some *aqua*

regia accidentally dropped into it from a phial above, which on its way had come in contact and dissolved a portion of the tin, connecting the small panes of glass together : this immediately converted the natural purple or crimson dye of the cochineal, into a most beautiful dark red or scarlet ; and the discovery was soon afterwards brought to perfection by his son-in-law, Kuffelar, and introduced into England by Drebbel himself in 1640, under the denomination of the *Bow dye*, from its being manufactured at Bow, near London ; however the word *scarlet* is of a much more ancient date, and is noticed in a grant of Henry III. of France to the Count of Cleves, of some territory in France on condition of delivering to him yearly three pieces of *scarlet cloth* made of English wool.

The beautiful pigment *carmine*, used chiefly in miniature and water colour painting, and sometimes under the name of *rouge*, to give the natural bloom and appearance of youth, (for which purpose it was used by the Roman ladies in the time of Augustus,) is made from the kermes. A crystal box containing some rouge, was discovered at Herculaneum.

COCK-FIGHTING. The origin of this sport is of great antiquity, if credit may be given to Palmarius, who states that the sons of Midas, king of Phrygia, about the year 550 B. C., had a serious quarrel at a quail fight ; and cock-fighting has for ages been the favourite amusement in China, and among the Malays and natives of the Indian islands. Ælian relates that the custom was introduced into Athens upon the following occasion :—"Themistocles on his march against the Persians observed two cocks fighting, and availed himself of that opportunity to encourage his troops, by observing that those birds did not fight for their household gods, the monuments of their ancestors, or for liberty or glory, but solely because they had that god-like and noble spirit in them that they would sooner die than submit." This address had such an

effect on the Grecians that by great exertions they obtained a complete victory, to commemorate which, and for the purpose of encouraging noble and heroic principles, cock-fighting was, by a particular order, directed to be annually exhibited to the Athenians. But this institution was afterwards abused and perverted to a common pastime and barbarous amusement; and it is even stated that the Greeks introduced the steel spurs with which they armed their cocks to expedite their destruction, and also by giving garlick and other modes endeavoured to increase their irritability and courage.

From a passage in Columella, who wrote upon agriculture and domestic animals, in the time of the Emperor Claudius, it would seem that the diversion of cock-fighting, though still practised by the Greeks, was not then introduced among the Romans, though soon afterwards both quails and partridges, as well as cocks, are noticed as being pitted by them for the purposes of fighting.

The game-cock is a native of Britain, at least was in the island before Cæsar's arrival, and it is probable that cock-fighting was introduced by the Romans; according to Stow the earliest historical notice of it is to be found in Fitz Stephen's Life of Archbishop Becket, written in the reign of Henry II., wherein he informs us that anciently on Shrove Tuesday, the school-boys used to bring *cocks of the game* to their master, and delight themselves in cock-fighting all the forenoon, since which a barbarous custom hath been instituted on this day of *throwing at cocks*: from this time the diversion has continued amongst us, and was much encouraged by Henry VIII., who, it is supposed, founded the celebrated national cockpit at Westminster, and it was afterwards renewed and encouraged by Charles II., who introduced a peculiar breed called the *pile cocks*, which are still in great request.

COFFEE. This beverage was unknown to the Greeks

and Romans, and is altogether a modern discovery; some say it originated with the prior of an Arabian monastery, who being informed by his shepherd that his cattle, if they ate of the berries of a certain shrub in the plains would be restless and incapable of sleeping during the night, was curious to prove the effect of it upon his monks, whom he found very averse to midnight prayer; others say that the custom of drinking coffee was brought into Arabia from Persia by Gemaldan, High Priest of Aden, a city near the mouth of the Red Sea, who having found it in many respects beneficial, recommended it to his followers, and their example brought the beverage into repute at Aden, from whence it found its way into Mecca and Cairo. The introduction of it into Constantinople is thus related by Batchevi, the Turkish historian:—"There was no coffee used either in Constantinople or any other part of Romelia, before the year 962 of the Hejira; in that year two persons, one of whom was a native of Damascus, called Chems, and another from Aleppo, named Hakim, came to Constantinople, and opened two shops in the quarter Takhtekala, where they sold that excellent beverage: at first these coffee-houses were only resorted to by the indolent; but they soon became popular among the wits and men of letters; and their reputation was such that many distinguished personages, always excepting ministers, went to them without scruple; but the priests declaring that they were frequented more than the mosques, and that all substances roasted to charcoal were prohibited by the law, it became necessary to remove the shops into bye streets: however, some years afterwards the priests revised their doctrines and declared, that as the roasting of coffee did not really convert it into charcoal, it might be drank without endangering salvation; and at length the Grand Viziers themselves built coffee-rooms, and got a sequin or two daily rent for them."

John Thevenot, the celebrated traveller, a native of Paris,

about the year 1650 introduced this beverage into France; and in 1652 it was brought into England by Edwards, a Turkey merchant: it is stated that his servant, a Greek, named Pasqua, established the first coffee-house in George-yard, Lombard-street; though others assert that Bowman, a servant of Mr. Hodges, a Levant merchant, first set up a coffee-house in St. Michael's alley, Cornhill, in 1652, which four years afterwards was followed by the Rainbow coffee-house, near the Inner Temple Gate; and the Bagnio opened by the Turkey merchants in 1679.

The first mention of coffee in our statute-books is in the year 1660, when a duty of four-pence was imposed on every gallon of coffee sold. In the commencement of the eighteenth century the tree was brought from Mokka and planted in various parts of South America; and thus the berry, which, about three centuries ago, was only known as an article of food to some savage tribes in the confines of Abyssinia or Arabia, has made its way through the whole civilized world, as well Mahometan as Christian, and is in universal request on the continent of Europe; though tea is more generally preferred in England.

COFFIN. In the earliest times people were merely buried in their cloaths; the Egyptians however made use of coffins; and many of stone and of sycamore wood are frequently discovered in that country. Numa recommended this mode of burial to the Romans 700 B. C.; and we read that the body of Alexander was deposited in a golden coffin by his successor Ptolemy. The wealthy Romans, towards the close of their empire, were buried in coffins, and introduced the custom into this country. Arthur, who died in 542, was buried in a wooden coffin. *Sarcophagus ligneus*, at Glastonbury, and stone coffins, were common among the Saxons, and continued till the time of Henry VIII.; but burial in coffins, as a *universal* custom, cannot with us be traced much beyond a century, at which

period the poor were sewed up in sheets, and carried to the grave in a parish shell.

COIF. Spelman conjectures that this kind of cap was introduced to hide the tonsure of such renegade clerks as were tempted to practise in the secular courts, notwithstanding their prohibition by canon, and that the antiquity of it can be traced to the time of Henry III.

COIN. The exchange of one commodity for another according to the mutual wants of the parties, was the ordinary mode of traffic in the first ages of the world, but the inconvenience attending it must soon have pointed out the necessity of imposing an artificial value upon some metal, by which the barter might be facilitated, and silver, from its beauty and durability, was at an early period made use of for this purpose; thus we read that when Abraham, about 1850 B. C., purchased of the sons of Heth, the cave of Machpelah as a burial place for his wife Sarah, he gave for it four hundred shekels weight of silver (the shekel being equal to about 4dwt. 13½gr.) which he weighed to Ephron, for the Egyptians had no coin till the time of Alexander, nor the Hebrews till about 150 B. C. Afterwards, instead of cutting and weighing the metal every time a purchase was made, pieces ready cut and of a known weight were introduced: and to prevent fraud were stamped by the government, and in process of time the name of the prince or ruler was engraved upon them, and thus coins were established.

According to Herodotus, the Lydians coined money a thousand years before the Christian era, and about a century afterwards silver was coined in Greece by Phedon, king of Argos, and gold by Philip of Macedon, which he procured from the mines of Philippi in Thrace, 340 B. C.; but Macedon had a silver coinage long before this time, and it is said

that some of the coins of Alexander I., 500 B. C., are still to be met with in the cabinets of the curious, and are the most ancient that have been discovered. In the time of Alexander the Great, the Greek coinage was carried to a very high state of perfection.

The first Roman coinage was of brass or copper, and had its rise in the reign of Servius Tullius, 578 B. C.; it was named the *As libra*, because actually weighing a pound, but in a short time various subdivisions of it were made, and about 190 B. C. the *As* itself had been reduced to the weight of half an ounce. Silver was coined 269 B. C., at which time the denarius weighed ninety grains, but in the time of Vespasian had fallen to fifty-three grains, and was worth about fifteen asses, or seven-pence halfpenny of our money. The aureus, or common gold coin, was first issued about 204 B. C., and weighed one hundred and sixty-six grains, but had fallen to ninety-six in the time of Heliogabalus, A. D. 218, and was equal in value to twenty-five denarii, and being nearly of the same size as the denarius, was called the *aureus denarius*.

Shapeless pieces of copper and iron, though of a known weight, were employed by the early Britons, in the purchase of commodities till Cunobelin, king of the Trinobantes, who had been educated in the court of Augustus, established a coinage in imitation of the Romans, and paid his tribute to the Emperor in coins of gold and silver, but on the second subjugation of the Island by Claudius, the British mint was destroyed, and the coins of Rome were introduced, and continued in circulation till the arrival of the Saxons.

There seems to be little doubt but that the silver *penny*, *pening* or *pending* of the Saxons, (from *pendo*, to weigh) and the *denarius* of the Normans, was a Roman coin; though it cannot be traced farther back than the year 688, from which period it continued to be the common, and very frequently the only coin current, till the time of Edward III., and a regular

series of it extends without any intermission, except during the reigns of John and Richard I., from the time of Egbert to the present date; these pennies weighed originally $22\frac{1}{2}$ gr. troy: this was the weight at the close of Edward the second's reign, but a gradual reduction from that time took place; and at the end of Elizabeth's reign the silver penny had fallen to its present weight of 7 4-5th grains. Pinkerton states that the old English penny, or *Anglicus*, was a coin celebrated all over Europe in the middle ages, and almost the only money known in the Northern kingdoms. Till the reign of Edward I. the penny was struck with a cross so deeply indented, that it could be easily divided into halfings or *half-pence*, and feorthlings or *farthings*, though it is supposed a separate coinage of silver half-pennies was made in the reign of the two first Williams, or at any rate in the time of Henry I.

The Saxons introduced the *Sceatta*, a coin similar to the penny; also a copper coin, called the *styca*, two of which were equal to a feorthling; and in Domesday-book is called a *mite*: this coin was chiefly confined to the kingdom of Northumbria.

Henry III. in 1257 issued the first *gold coin* in this country, which was called the gold penny, and equal to twenty of the silver in value: no other gold coin was struck till the Florence of Edward III. in 1344, about which time the old cross gave way to armorial bearings, which now first appear on English coins, and gold became common in Europe.

In 1594 Elizabeth issued a small *copper coinage* called a *half-penny*, in order to check the circulation of the leaden tokens among the trades-people, which had been introduced in the reign of Henry VII.; and James issued his royal farthing tokens in 1616: in 1672 Charles II. had copper half-pence and farthings, with the royal bust and Britannia: but disputes arising respecting the value of the copper, tin farthings and half-pence were coined in 1684, and continued till

1693, when they were called in, and a regular copper coinage established.

Sovereigns of gold and *crowns* of silver were coined in the reign of Henry VIII., as also the silver *shilling*, so named from the German schilling, which was first struck at Ham-burgh in 1407: *half-crowns* and *sixpences* of silver were coined in the time of Edward VI.; and the *guinea*, so called from its being made of the African gold, in 1663.

It has been already stated that the Egyptians cut and weighed their metal in the presence of the seller, not having any coin of their own; and that the first regular coinage had its rise in Lydia: this coinage was probably effected by the same means as those made use of by the Greeks, who after having purified the metal, made it into a small round ball, and placing it between two dies, fixed the impression by repeated strokes of the hammer, which method was also adopted by the Romans, though at first they cast their brass coins in moulds; and was generally practised in the middle ages till the year 1553, when the more powerful operation of the mill-screw was invented by Antoine Bucher, a Frenchman; and a few years afterwards introduced into England. Owing however to some defect in the machinery, it was soon laid aside, and the hammer resumed till 1602, when the mill was finally established in our mint: soon after which a method of *graining* was invented on the edge of the coins, to prevent their being injured by clipping or wearing: *legends* on the edge occur in 1651; though they had been used in France a century earlier; and *milling*, the *crenation* of the Romans, in 1663.

The Macedonians first engraved upon their coins the portrait of their kings, which custom was not adopted by the Romans till the time of Julius Cæsar, when the practice became general, and is now universally followed in all civilized states, except those governed by Mahometans, who, in detestation of images, inscribe only the name and

titles of the prince, and on the reverse the name of the coin, and the year of the Hejira in which it was issued.

The Romans, according to Paucton, were the first who taught the world the criminal art, as he calls it, of debasing the purity of metals intended for coins by alloy; but this had been previously practised by the Macedonians, who discovered that gold or silver in its pure state was of too soft and flexible a nature for common use, and therefore required some harder metal to be mixed with it.

COKE, (*See Coal.*)

COLLARS, as an ornament of knighthood, were introduced in the reign of Henry IV. The collar of S. S. was first worn by the Society of S. Simplicius, in honour of Simplicius and Faustinus, Roman senators, who suffered martyrdom with a collar or chain round their necks, under Dioclesian.

COLONELS, and Lieutenant-Colonels, are noticed in the commencement of the seventeenth century.

COLUMN. This kind of architecture originated with the Assyrians, and was adopted by the Greeks and Romans.

COMB. Neglect of combing the hair was deemed by the Romans a mark of military bravery: the Britons had combs, though they made little use of them till the arrival of the Danes. An ivory comb and looking-glass, or mirror, was presented by Pope Boniface in 597 to Ethelburge, the daughter of Ethelbert, King of Kent.

COMET. The Chinese astronomers noticed a comet near the star Antares, 525 B.C.: but the course of one was first regularly described by Nicephorus Gregoras, A.D. 1337.

COMMON Prayer. The liturgy of the English church was originally composed in 1547, and brought into general use the following year: it was revised in the year 1553, having the Confession and Absolution added to it, and the introduction of the ten commandments at the commencement of the communion service, whilst many prayers favouring of the Roman superstition were omitted: in this state it continued, except during the short period of Mary's reign, until the accession of James I., when a review of the prayer-book became one of the first acts of his reign; and among other alterations, that part of the church catechism which treated of the sacraments, was introduced: some few alterations were made in the Liturgy in the 14th Charles II., since which no change worthy of notice has been attempted.

COMMONS. This distinct portion of the British Parliament commenced in 1264, when, in lieu of the lesser barons formerly summoned to the Parliament by the Sheriff of the County, the people were empowered to elect their own representatives, which privilege was general till the time of Henry VI., when the right of voting for county members was restricted to freeholders of forty shillings' rent.

It is not certain at what precise time the Commons of England began to sit in a separate house; but probably it took place soon after the system of election was established—at any rate it was prior to the year 1376, as we find Peter de le More was then speaker: the members were remunerated for their attendance so late as Elizabeth's reign. Lord Francis Russell, son of the Earl of Bedford, was the first nobleman who in 1549 accepted of a seat in the House of Commons:

COMPANY. The earliest association of persons in this country for the promotion of a particular branch of trade, and sanctioned by the authority of government, was that of the Company of Weavers, in the reign of Henry II., 1170; and

as in a work of this description a reference to the period of the establishment of the various trading companies may be frequently desirable, an alphabetical arrangement of them is given.

African	- - - -	1673	Girdlers	- - - -	1448
Apothecaries	- - - -	1617	Glass-sellers and look- ing-glass makers	} - - - -	1664
Armors	- - - -	1423	Glaziers and glass painters	} - - - -	1637
Bakers	- - - -	1307	Glovers	- - - -	1638
Barber Surgeons	- - - -	1308	Gold and silver wire- drawers	} - - - -	1623
Blacksmiths	- - - -	1577	Goldsmiths	- - - -	1393
Bowyers	- - - -	1622	Grocers, formerly call- ed Pepperers	} - - - -	1844
Brewers	- - - -	1427	Gunsmiths	- - - -	1638
Bricklayers and Tylers	- - - -	1568	Haberdashers	- - - -	1447
Butchers	- - - -	1604	Hatmakers	- - - -	-
Carpenters	- - - -	1344	Hat-band-makers	- - - -	1638
Cloth-workers	- - - -	1482	Horners	- - - -	1638
Clock-makers	- - - -	1632	Inn-holders	- - - -	1515
Coach & Harness-makers	- - - -	1677	Joiners and Ceilers	- - - -	1570
Comb-makers	- - - -	1636	Ironmongers	- - - -	1462
Cooks	- - - -	1481	Leather-sellers	- - - -	1393
Coopers	- - - -	1500	Lorimers	- - - -	1468
Cordwainers	- - - -	1410	Masons	- - - -	1410
Curriers	- - - -	1605	Mercers	- - - -	1393
Cutlers	- - - -	1413	Merchant Taylors	- - - -	1466
Dyers	- - - -	1473	Musicians	- - - -	1604
Distillers	- - - -	1638	Needle-makers	- - - -	1656
Drapers	- - - -	1438	Painter stainers	- - - -	1580
Embroiderers	- - - -	1561	Parish Clerks	- - - -	1222
Fan-makers	- - - -	1701	Patten-makers	- - - -	1670
Farriers	- - - -	1673	Pewterers	- - - -	1462
Felt-makers	- - - -	1604	Plaisterers	- - - -	1500
Fishermen	- - - -	1687	Pin-makers	- - - -	1636
Fishmongers	- - - -	1536	Plumbers	- - - -	1611
Fletchers	- - - -	-	Poulterers	- - - -	1503
Founders	- - - -	1614	Sadlers	- - - -	1289
Frame-work knitters, or stocking weavers	} - - - -	1664			
Fruiterers	- - - -	1604			
Gardeners	- - - -	1616			

Balters - - - -	1558	Tobacco-pipe-makers -	1668
Scriveners - - - -	1616	Tin-plate-workers - -	1670
Shipwrights - - - -	1605	Turners - - - -	1608
Silk-throwers - - - -	1629	Vintners - - - -	1340
Silk-men - - - -	1631	Upholders - - - -	1627
Skinners - - - -	1325	Watermen - - - -	1700
Soap-makers - - - -	1630	Wax-chandlers - - - -	1484
Starch-makers - - - -	1622	Weavers - - - -	1170
Stationers - - - -	1557	Wool-men - - - -	
Tallow-chandlers - - - -	1461	Wheel-wrights - - - -	1670

East India Company. Some maintain that Alfred sent his ships to Alexandria to receive merchandise, which he procured from India and Persia, by means of the Red Sea ; and that, in his reign Sighelm, Bishop of Sherborne, visited India, taking with him gifts for the christians at St. Thomas, and bringing spices and precious stones, some of which, William of Malmsbury relates, were to be seen in the cathedral church of Sherborne ; but it is generally understood that our first commercial intercourse with India commenced in 1591, when three ships were fitted out for that country, one of which only reached India in a very distressed state, and its commander, Captain Lancaster, returned in another vessel, having been three years absent ; but he gave such a favourable report of the advantages resulting from the prosecution of the trade, that a regular company was established for this purpose, on the 31st of December, 1600, which was dissolved by Cromwell in 1655, and the trade thrown open ; however, a new company was formed in 1661, which in 1698 was opposed by another body of merchants, that commenced trading to India. In 1702, both these companies agreed to join their interests and form one company, under the title of the United Company of Merchants of England trading to the East Indies.

COMPASS. Though Pythagoras, Thales, and the ancient philosophers, were acquainted with the attractive property of

the magnet, they altogether overlooked its directive power, by which a commercial intercourse has been established between the most distant nations, and an accurate knowledge of the shape and size of the world acquired. Many suppose the compass was known in China in the time of the Emperor Cheninguis, 1120 B. C., and that Tcheou Kong, about a century afterwards, gave to certain merchants who had visited China, a *Tcht-nan* or compass, which would enable them to return home by a shorter route. The earliest mention of the compass in Europe, is in the work of Guigit de Povins, a French poet, written in 1180, and quoted by Claude Fanchet in his *Recueil de l'origine de la langue et poesie Francoïis*, wherein he observes that—

Par la vertu de la manete
Ou il fers volenter se joint,
Quant il nuis est tenebre et brune,
Con ne voit estoile ne lune,
Parce sont il mariner ceinte,
De la droit voir tenir.

The Venetians state that their countryman, Marco Paulo, brought the knowledge of the compass from China into Europe, in the year 1260; while the Neapolitans assert that John de Gloga, a noble citizen of Amalfi, first discovered the Mariner's Compass, about the year 1302, in consequence of which the compass is assumed in the arms of the territory of Principato, in which province Amalfi is situated, and that the fleur-de-lis was placed at the North in compliment to Charles of Anjou, then prince of Naples.

The variation or declination of the needle from its true meridian was noticed by Columbus in his voyage to America, and that the variation itself fluctuated, was discovered by Muir, in 1612. The dip, or inclination of the needle to point below the horizon, was first noticed by Norman in 1581.

COMPASSES. This mathematical instrument is fabu-

lously ascribed to Talaus, the nephew of Dædalus : several were discovered at Herculaneum ; and among the number, a pair of *reducing* compasses : *caliper compasses*, with arched legs for taking the diameter of convex or concave bodies, were invented in 1540 by Geo. Hartman, a native of Nuremberg.

CONCHOLOGY. From the works of Aristotle and Pliny, the great naturalists of Greece and Rome, it would appear that the study of conchology was not overlooked in their time. The first among the moderns who attempted a classification of shells, was John Daniel, a Professor of Medicine, in the University of Keil, 1675.

CONSTABLES of Hundreds, or *High Constables*, were first appointed by Edward I.; and the common or *petty constables* in the reign of Edward III.

CONSTELLATIONS. The division of the heavens into constellations is probably as ancient as astronomy itself : several of them are mentioned in Job : the Greeks had but forty-eight constellations, including the twelve signs of the Zodiac : to this number the moderns have added about forty-five.

CONVOCAION, (*See Clergy.*)

COPPER. This metal is noticed in the earliest periods of history, and was applied by the Egyptians to a variety of purposes. Hesiod notices its being used in the roofing of houses : the Romans fabricated the greatest number of their utensils with it : and vessels of copper, lined with silver, instead of the modern method of tinning, were discovered at Herculaneum, (*See Brass.*)

CORDAGE. The Romans acquired from the Carthaginians the art of working up the vegetable production, called

the spartum or juncel, into ropes, and taught it to the Britons—hence to this day old cables and ropes are distinguished among British sailors by the name of *junk*. In the time of Augustus, hemp was cultivated for the purpose of sail-cloth; and afterwards hempen cordage became common.

CORK. The bark of this tree, the phellus of the Greeks and suber of the Romans, seems to have been applied by the ancients to as many purposes as at present, viz. : as floats to the fishermen's nets, anchor buoys, soles for shoes, and (according to Pliny) as stoppers to jars and vessels; though other substances, such as pitch, wax, &c., were generally made use of for that purpose: it is singular however that glass bottles, which were introduced in the fifteenth century, had no cork-stoppers till near the end of the seventeenth century, when they were first used in the apothecaries' shops in Germany, and the stoppers of wax, which were more troublesome and expensive, laid aside.

CORN. It is supposed that in the first ages men lived on the spontaneous fruit of the earth, as acorns, and the nut or mast produced by the beech. Any attempt to trace the cultivation of corn must be absurd; for it was known to the Egyptians long before the fabulous accounts of Isis and Ceres.

From the poor state of agriculture in England during the Saxon period, the exportation of corn was prohibited, whilst the importation of it was freely invited: however, in the seventeenth year of Richard II. an act was passed, permitting the exportation of corn, on payment of the customary duties; and in 1436, it was directed that exportation should be allowed when wheat was under six shillings and eight-pence per quarter; and that the importation should only be permitted when the wheat had risen to that price; and this system, with reference to the value of corn, as compared with that of specie, has ever since been acted upon:

Corn Factors or Brokers were not employed till about the year 1745: the origin of them is thus noticed:—"The farmers coast-ways used to attend Bear Quay once a-week with samples of the various sorts of grain then lying in the vessels on the river; it however frequently happened that the farmers were forced to return home without having disposed of their grain; and as the Essex growers principally used the Bull Inn in Whitechapel, (which the buyers also on that account frequented) some of them who had a good opinion of the landlord, whose name was Johnson, began to leave their samples with him, to be sold at fixed prices; and afterwards entrusted him with discretionary powers as to market prices, which he managed so much to the satisfaction of both buyers and sellers, that in a short time he opened a little counting-house on Bear Quay, and called himself the corn-factor of the Essex farmers, in which business he was succeeded by his son and grandson."

CORONETS were first assigned to earls by Henry III.; but John of Eltham, second son of Edward II., was the first who wore a coronet. Selden says that Audomer d' Valence, Earl of Pembroke, had a coronet—16 Edw. II. The marquis's coronet was granted by Richard II.; and the viscount's in the time of James I.: the barons' had only a crimson cap, turned up with fur, till the coronet was allowed them by Charles II.

COTTON. It is stated that the cotton plant was anciently to be found only in Egypt, and that the down of it was fabricated into garments, to be exclusively worn by the priests: the raw material was introduced into Europe long before the discovery of the passage to India by the Cape of Good Hope; and it appears in Hacluyt's Collection of Voyages, that this country was supplied with it from the Levant by the Genoese vessels in 1430; but afterwards the trade was entirely en-

grossed by the merchants of Antwerp ; and the manufacture of cotton cloth had been brought to considerable perfection in Flanders, when the persecution of the Protestants commenced, under Philip II.

It is singular, that in the time of Henry VIII., the term cotton was frequently applied to goods manufactured wholly of wool ; and therefore the Manchester cottons and *Welsh cottons* of that day were a species of woollen cloth, as is the case with the present *Kendal cottons*, which are manufactured entirely of wool, and that of the coarsest kind, and this has existed for near five centuries.

The first certain information respecting the cotton manufacture of this country is contained in Lewis Robert's "Treasure of Traffic," published in 1641, wherein he states that the people of Manchester buy cotton-wool that comes from Cyprus and Smyrna, and work the same into fustians, vermilions, and dimities, which are sent to London, and sold or exported.

Prior to the year 1767 the mode of spinning was confined to the well-known domestic machine called the *one-thread wheel*; and the manufacture of cotton cloth was one of the humblest of our domestic arts, and confined chiefly to the fire-side and cottage of the labouring poor of Lancashire : but the introduction of the spinning jenny by Hargreaves in that year, and the improvements made to it by Arkwright's rollers in 1769, brought the manufacture, from a comparative state of insignificance, at once into a vigour and activity which has no parallel ; and it became, in the short period of thirty years, one of the most flourishing and important branches of our national industry.

The following history of a pound weight of manufactured cotton may shew the importance of the trade to this country : the wool came from the East Indies to London, from thence it went to Lancashire, where it was manufactured into yarn ; from Manchester it was sent to Paisley, where it was woven ;

it was next sent into Ayrshire to be tamboured; from thence to Dumbarton to be hand-sewed, and again returned to Paisley; from whence it was sent to a distant part of the county of Reufrew to be bleached; it was afterwards finished at Glasgow, and prepared for the London market; the services of one hundred and fifty people being required in the manufacture of this small quantity of cotton, by which the value had increased two thousand per cent.

The total value of the cotton manufacture of Britain is computed at thirty millions sterling, and the number of persons employed at half a million.

COUNTY. In the time of Ethelred, 978, the counties of England were but thirty-two in number, viz.:—Kent, Surrey, Sussex, Hampshire, Dorsetshire, Wilts, Somerset, Devon, Cornwall, Hereford, Worcester, Shropshire, Cheshire, Berks, Oxford, Gloucester, Stafford, Derby, Nottingham, Lincoln, Northampton, Leicester, Norfolk, Suffolk, Huntingdon, Cambridge, Bedford, Warwick, Hertford, Essex, Middlesex, and Buckingham: William the Conqueror added Yorkshire, and afterwards Lancashire and Durham, which were probably parts of Yorkshire: the re-uniting of the three counties of Cumberland, Westmoreland, and Northumberland, formerly held by the Scots, made up thirty-eight counties: it is not known when Rutland was made a distinct county: the thirteen Welch counties were added by Edward I. and Henry VIII.; and thus the present number of fifty-two counties for England and Wales were completed.

COURSING was a favourite amusement among the Gauls, and is noticed by Arian, who flourished A. D. 150: it was introduced into this country by the Romans, and both the Saxons and Normans were partial to it: the present laws of coursing were drawn up by the Duke of Norfolk in the time of Elizabeth: formerly the deer and fox were coursed as well as the hare.

COVENTRY. The popular phrase of sending those whom you dislike to *Coventry*, Hutton says, originated during the civil wars, when the Birmingham people sent the royalist prisoners for safety to Coventry.

COVERCHIEF, or *Kerchief*, a part of the female dress, is as ancient as the eighth century, at which time it was worn by the Anglo-Saxons.

COWS. One or more milch cows were formerly kept for the general use of the village; cow-houses were not general till the thirteenth century.

COW-POX. (*See Vaccination.*)

CRADLE. The first we read of in this country is that of Henry V., which was swang between two posts; they were used by the Romans, and in the middle ages Theocritus mentions rocking.

CRANES. In the Saxon period we hear of tame cranes, who stood before the table at dinner.

Cranes for raising weights were used by the Romans.

CRANIOLOGY. The science of discovering the different faculties of the mind from the form of the cranium has been attributed to Dr. Gall, a physician of Vienna, in 1800; but Hamilton, in his late work on this subject, refers the origin of the art to John Raban de Retham, who published a tract upon craniology in the year 1500, in which the terms have the same general termination of *ia* as given to them by Gall; thus the ancient German speaks of the *cellula imaginativa*, *memoritiva*, *estimativa*, *cogitiva*, &c.; the fable therefore, he adds, is obsolete and absurd, and presents but the organic remains of a science exploded above three centuries ago.

CRAPE. The invention of this light transparent stuff is very ancient, and came originally from Bologna. Robbery with the face concealed by black crape, is noticed by Matthew Paris.

CRAVATS, or Neck-cloths, were introduced in the latter part of Charles II.'s reign, and being worn by him and the courtiers became exceedingly fashionable, and in a short time entirely superseded the shirt bands; the only vestige of which ornament now remaining is in the collars of children's shirts, made wide and turned back over their coats upon their shoulders.

CRAYONS were known to the French early in the fifteenth century. Hans Holbein drew portraits in crayons.

CREED. That of the Apostle's is so called, because for many ages it was believed to have been framed by the Apostles before they left Jerusalem, at least this is the account given of it by St. Ambrose and several others; at any rate it is a very ancient composition, and upon the whole an unexceptionable summary of the Christian Doctrine. It may indeed in part have been transmitted down from the Apostles, and afterwards gradually enlarged in its present form as occasion required.

The *Athanasian* Creed is generally attributed to Athanasius, bishop of Alexandria, who wrote in the fourth century; yet it is neither mentioned nor referred to in any of his genuine works, nor notice taken of it by the writers who immediately succeeded him: nor indeed earlier than the tenth century. Fabricius is of opinion that it was first written in Latin, long after the fifth century, and afterwards translated into Greek.

The *Nicene* Creed was composed and established as a proper summary of the Christian faith by the Council of

Nice, A. D. 325, against the Arians ; this is also called the Constantinopolitan Creed, because it was confirmed with some few alterations by the Council of Constantinople, A. D. 381.

The custom of turning to the altar while the congregation are repeating the creed, is very ancient. St. Austin says, when we pray standing we turn our faces to the East, from whence the day springs, that we might be reminded of turning to a more excellent nature, namely, the Lord ; secondly, that forasmuch as man was driven out of paradise, which is towards the East, he ought to look that way which is an emblem of his desire to return thither ; lastly, they prayed that way, believing that our Saviour would come to judgment from that quarter of the heavens. "For as the lightning cometh out of the East and shineth unto the West, so shall the coming of the Son of Man be, and he is to come in like manner as he ascended."

CROCUS, or Saffron, a plant which was introduced into Spain by the Arabs, and first brought into this country from the Levant, in the reign of Edward III., by a pilgrim, who, at the hazard of his life, found means to conceal the root in his palmer's staff, which had been made hollow for that purpose ; it was first cultivated at Saffron Walden.

CROISADE. The Mahometans, during the reign of Charlemagne, made a most formidable irruption into Europe, and France in particular felt the weight of their fury ; but the honour which was obtained by the knights who wore the badge of the cross on their right shoulder, drew the youth of every Christian power to the standard of that political monarch, and in fact (a circumstance however neglected by historians) gave birth to the crusades, which are generally supposed to have originated from the instigations of Peter the hermit in the year 1096.

CROSIER. The pastoral-staff was originally no longer than a walking-stick, and used as such in the second century by bishops and abbots, though at the same time as an emblem of authority, one part of it was made crooked to draw the meek, the other to punish the contumacious.

Curva trahit mites, pars pungit ociosa rebelles.

In process of time the crosiers were made larger and more ornamental until they reached the height, richness and exquisite workmanship displayed in that which formerly belonged to William of Wykeham, bishop of Winchester, in 1367, and now preserved in the New College, Oxford. The crosier of an Archbishop consists of a lofty professional cross with a single bar to it; that of a Patriarch of such a cross with two bars to it; and that of Pope, of a triple barred cross; but Du Cange says that, for some mystical reason, the crosier was not used by the Pope.

The Archbishop of Canterbury was entitled to have his crosier carried before him in every county in England; but the Archbishop of York could not exhibit his south of the Humber. Abbots and abbesses were obliged to have a veil attached to their crosiers, to signify that their authority was of a private nature, and confined to their respective communities; and for the same reason the crooked head of the crosiers was always turned towards their own persons, whereas bishops held them outwards.

CROWNS. This mark of regal dignity, in modern times, was first assumed by the Emperor Aurelian; yet the ornament did not become common till the time of Constantine. Selden thinks the crowns mentioned in the bible were not intended to be worn, and appear to be more of a religious than a civil ornament.

Our Anglo Saxon kings wore only a plain fillet of gold, till Egbert added rays to the circle, and Edward, surnamed Ironside, tipped the points with pearl; the imperial double

arched crown was first worn by Edward IV., since whose time there has been but little alteration.

The globe, as the symbol of dominion, was common on the imperial coins; Constantine is supposed to have added the cross, though Selden first noticed it on the coins of Theodosius. Our kings have generally used it from the time of Edward the Confessor, or as others state, Alfred.

CRYSTAL. The Romans were but little acquainted with the nature of crystal, which they considered as petrified water; they manufactured it into cups, as did also the Saxons.

Cupboards of crystal glass were imported from Venice in the time of James I.

CURRENT. The tree, or shrub, is by several authors said to have been brought into England from Zante, an island belonging to Venice, in 1533; its fruit was then called the grapes of Corinth, and from this place the dried currant is still imported.

CURTAINS. The Romans had window curtains; formerly Judges in criminal causes had a curtain drawn before them when they gave sentence.

CUSTOMS. This tax originally commenced under the Roman kings. A custom house existed among the Anglo Saxons.

CYDER is supposed to have been first known in Africa, and introduced by the Carthaginians into Biscay, from whence the Normans obtained it. Cyder was made in England in the thirteenth century.

DACTYLOGY, or the art of discoursing with the fingers, was practised by the ancient Romans.

DAMASK. This beautiful method of weaving silk or linen with flowers and figures raised above the ground, was originally invented at Damascus, from whence it was introduced into Europe by the Crusaders, and brought into this country by the Dutch and Flemish weavers, during the reign of Elizabeth. In the fourteenth century a yard of damask was valued at four guineas.

DAMASKEENING, the art of enlaying gold and silver upon steel and other metals, had also its origin in Damascus, and was first attempted in Europe about the middle of the sixteenth century, and brought to considerable perfection by Cursinet, a Frenchman, in 1596. The people of Damascus were also celebrated for their method of tempering steel for sword blades, until Tamerlane transferred the art into Persia, by carrying away with him all the manufacturers of it into that country.

DANCING: This amusement, which is common to all nations, both civilized and barbarous, is said to have been invented by Minerva, who danced for joy after the defeat of the giants. By the Levitical law, dancing was directed to be practised at the solemn feasts of the Jews, and both the Greeks and Romans had their sacred and military dances. According to Scaliger, the solemn dances of the Hebrews.

and Romans were, in great festivals, practised by the primitive christians, in which the bishops and dignified clergy joined. Menestrier, who wrote in the time of Lewis XIV, observes that the name of choir still retained in our churches is derived from the Greek *koros*, a *dance*, and that formerly the choir was separated from the altar, and elevated in the form of a theatre, enclosed on all sides with a balustrade, for the purposes of dancing; and on particular occasions, dancing is permitted in the churches of Spain to this day.

The hornpipe air, so frequently danced to by our sailors, is of high antiquity, and can be traced to the ancient Britons, perhaps before the invasion of Julius Cæsar. The morris or morescoes dance was brought into England from Spain, in the reign of Edward III., and continued to be the favourite dance till the period of the Commonwealth. It is stated that after the coronation of Richard II., the king, prelates, and all the nobility and company, spent the remainder of the day in dancing to the music of the minstrels, in Westminster Hall. *Italian dancing* was first publicly performed in England, at York Buildings, in 1697.

The exhibition of *Rope dancing* was practised by the Greeks, from the first institution of their scenic games. *Elephants* were taught to walk the rope in the time of Galba and Nero. Dancing *dogs* are noticed by Plutarch; and in the carousal of Lewis XIII. of France, there were dances of *horses*.

In the Anglo Saxon period the rope dancers were called rap-ganga; and monkies, as well as men and women, danced upon ropes and wires in the middle ages.

DATE. Anciently our deeds had no date, except the month and year, to shew that they were not made in haste, or in the space of a day. In charters the days of the week and month are frequently expressed by the names of the Festivals. "I deliver this as my act and deed," occurs in a

charter of 933. Deeds began to be regularly dated in the reign of Edward I.

DAY. Originally the day began about sun-set, for "the evening and the morning were the first day;" and this is still the general custom throughout the East and in all Mahometan countries, and from the circumstance of our principal festivals commencing on the preceding eve, seems to have been practised in this country. Tacitus relates that the Gauls and Germans divided their time not by days but by nights, which was common among our Saxon ancestors, as we read in the Council of Cloveshoe, held in 824, "*Ibi finita et proscripta contentione coram episcopo, post XXX noctes illum juramentum ad Westminster deductum est.*" Hence our method of reckoning time by the *se'n*ight and fortnight, for seven nights and fourteen nights. Our method of commencing the civil day at midnight is derived from the Romans, who practised it from the earliest period of their history. In Monasteries the boys used to name the day of the month after Prime.

The days of the week have received their names chiefly from the Romans: thus Sunday and Monday from their being dedicated to the sun and moon. Tuesday was consecrated to Mars, the *Tyr* of the Saxons; Wednesday to Mercury, the Wodin or Odin of the Saxons; Thursday to Jupiter, the Thor of the Saxons; Friday to Venus, the Freya of the Saxons; and Saturday to Saturn, the Seator of the Saxons.

DEACON. This rank in the church, as well as that of deaconesses, was instituted by the Apostles; the former had the superintendency of the people's charities, and also the charge of the altar; and the latter were generally widows, and assisted in baptising the women and attending the sick. By the Council of Nice deaconesses were permitted to be

ordained, and had rank among the clergy ; but this was prohibited by the Council of Laodicea, and about the twelfth century the office of deaconesses expired in the Western church, and soon afterwards in the Eastern.

DEAN. A distinguished officer in the church, so named from his being supposed to preside over ten canons or prebendaries ; it is stated that Constantine erected an office of nine hundred and fifty persons at Constantinople, whom he exempted from all impositions, and bestowed them in the Cathedral Church, to render the offices of burial gratis to the defunct ; these he called decani, from their being divided into tens, each whereof had a bier or litter to carry the bodies in.

DECIMATION. A military punishment with the Romans, in cases of desertion or mutiny, when every tenth man was selected by lot for death ; this practice has been occasionally recurred to in modern times ; as particularly in France, for the punishment of the garrison of Treves, in 1675, who capitulated and surrendered that place in opposition to the remonstrance of their commandant, the Marshal de Cregni. There was also a decimation during the government of Cromwell, in 1655.

DEER. The Anglo Saxons had tame deer who were great favourites, and taught to decoy wild ones into the hunter's nets ; but they are not noticed in parks till the fourteenth century. James I. imported a great number from Norway into Scotland, and on his accession to the British throne, introduced them into his chases of Enfield and Epping.

DEGREE. The division of the circle into three hundred and sixty parts, is attributed to the ancient Egyptians : but it would be fruitless to enquire why this number, in preference

to any other, was selected for that purpose. There can be no doubt that as soon as the spherical figure of the earth had been once ascertained, the philosophers would have been desirous of becoming acquainted with its magnitude; and that the idea of accomplishing this purpose by measuring a portion or degree of it, must readily have suggested itself: but we have no authentic account of any attempt being made to carry this into effect previously to the establishment of the Alexandrian school, about 300 B. C., when Aristophanes, the successor of Aristarchus, determined the difference of latitude between Syene and Alexandria in Egypt, to be $7^{\circ} 19'$; and which distance on measurement being found equal to 5000 stadia, he concluded the circumference of the earth to be 250,000 stadia. No satisfactory account of any further attempt is noticed till the year 1538, when Fernel, a Frenchman, undertook to measure the length of a degree between Paris and Amiens, by counting the revolutions of a carriage-wheel. Snellius, a German, in 1617, is the first who measured a portion of the meridian by a series of triangles, the only method now adopted, and which was carried to considerable perfection by Picard, Cassini, and others, in the beginning of the last century.

Norwood, an Englishman, in 1635, measured the distance from London to York, which he stated to be 905,751 feet; and having by altitudes of the sun deduced the latitudes of the two places, the difference of which he found to be $2^{\circ} 28'$, he determined the quantity of one degree to be sixty-nine miles and 1158 yards.

DEGREES, *Academical*, seem to have been instituted at a very early period, though the precise time cannot be ascertained. Doctors of the Law were people of consequence among the Jews, and are mentioned in Luke XI., 52 v.:—"Woe unto you, Doctors of the Law; for you have taken away the key of knowledge; you entered not in yourselves,

and them that were entering you hindered." The title of Doctor, it is said, was conferred upon the venerable Bede, at Cambridge; and upon John de Beverley, at Oxford, in 710; while others contend that academical honours were first conferred by the University of Paris about the close of the eleventh century, and in the course of a few years became established in other countries; and Spelman states that the appellation of Doctor was not among the degrees granted to graduates in *England* till the reign of John, about 1207. Degrees in medicine occur in 1384; and those in the faculty of music may be traced up to the year 1463, when Henry Hobington was admitted to the degree of Bachelor of Music, at Cambridge; and Thomas Sainturx, Doctor in Music, was made master of King's college in the same University.

DEIST. Viret, in his "*Instruction Chretienne*," published in 1563, is the first who notices this term as given to those who professed to believe in God, but shewed no regard to the doctrines contained in the New Testament.

DESKS, resembling those now common, have been discovered at Herculaneum, though the ancients generally wrote upon the knee, as is still customary in Asia and Africa. The reading desks used in cathedrals are of Saxon origin; that of the brasen eagle, meant to designate St. John, is very ancient.

DIAL. This instrument for measuring time must be of very great antiquity, if the following lines in Homer's *Odyssey*, xv. v., 402, have any reference to it:—

"Above Ortygia lies an isle of fame,
Far hence remote, and Syria is the name;
There curious eyes, inscribed with wonder, trace
The sun's diurnal and his annual race."

The island of Syria is supposed to have been inhabited by the Phœnicians; and it is presumed they were the people

who left this monument of their skill in astronomy : however, the first certain mention of the dial is that noticed in Isaiah, chap. xxxviii., v. 8, belonging to Ahaz, who commenced his reign about 741 B. C. Interpreters disagree very much concerning the form of this dial ; for the Hebrew word *maaloth*, which in the Vulgate is translated *horologium* and *gradus*, signifies literally a stair-case ; which both St. Cyril of Alexandria, and St. Jerome, believe was disposed with so much art, that the sun in its course shewed the hours upon it by the shadow : others state that this dial was a pillar, erected in the middle of a smooth pavement, upon which the hours, or rather the different portions of time, were engraved ; for it does not appear that even long after the reign of Ahaz, the Jews had adopted the method of dividing their time by hours.

The Greeks attribute the invention of the dial to Anaximander or his scholar, Anaximenes Milesius, who flourished about 550 B. C. Aristophanes, who lived in the time of Socrates, 450 B. C., makes one of his actors ask *what the hour is by the sun-dial*.

Pliny informs us that the first sun-dial at Rome was erected near the temple of Quirinus by Papilius Cursor, the Roman general, about 293 B. C. ; before which period the Romans make no mention of any other account of time than the sun's rising and setting. About thirty years after this, Marcus Valerius Messala brought another dial from Catena, in Sicily, being part of the spoils of that city, which he erected in the Forum ; and though not adapted to the latitude of the place, was the only measure of hours the Romans had till about the year 160 B. C., when the censor, Marcus Philippus, constructed a regular dial for the meridian of Rome.

Sun-dials were most probably introduced into this country by the Romans ; but the nature of the climate prevented their being of any great utility, and the history of them is consequently but little known.

DIAMOND. Notwithstanding the number of precious stones made use of by the ancients, it is probable that they were unacquainted with the diamond, on which modern refinement has stamped so immense a value. Some have imagined that Homer and Hesiod have mentioned this stone by the name of *adamus* and *adamantinus*; but it has been more generally supposed that these Greek terms have not any relation to it; and Pliny, who has taken much pains to investigate the discovery of precious stones, declares that he can find no mention of the diamond till near the beginning of the Christian æra; nor was any diamond discovered at *Herculaneum* or *Pompeii*. This valuable jewel in modern times seems to have been introduced into Europe by the Arabians, when they established themselves in Spain, and was then supposed to be possessed of a number of miraculous virtues, being an amulet against poisons and witchcraft, and an infallible specific in many diseases.

The art of cutting and polishing diamonds was probably known to the artists of China and India at a very early period; but the extreme hardness of this gem had baffled the attempts of the jewellers of Europe till the year 1456, when *Berghen*, a native of *Bruges*, constructed a wheel, which, by means of diamond powder, enabled him to cut and polish this substance in the same way as other gems are wrought by *emery*. Previously to this discovery diamonds were set in jewellery, precisely in the same state in which they arrived from India.

The discovery of the Brazilian mines in 1730 has tended very greatly to depreciate the value of this jewel; to prevent, therefore, its becoming too common, the Portuguese Government have limited the number of slaves to be employed by those to whom leases of these mines had been granted.

Diamonds being now imported in their rude state, are cut

by the jewellers into brilliants and rose diamonds ; the former are first noticed about the year 1650, and are considered by far the most valuable.

In 1564 Clement Beragne engraved on a diamond the portrait of Don Carlos, the unfortunate son of Philip II., of Spain.

The first mention of a diamond being used for writing on glass occurs in the sixteenth century, when Francis I. of France, in 1527, wrote some lines with a diamond ring upon a pane of glass, at the castle of Chamboud, in order to let Ann of Pisseleau, Duchess of Estampes, know he was jealous. The glaziers were accustomed to use emery, sharp-pointed steel, and a red-hot iron, for the purpose of cutting glass.

The largest diamond recorded was one belonging to the Great Mogul, dug from the Golconda mines in 1550, and weighing two hundred and ninety-seven carats, which, if cut, would be worth £622,738.

DICE are said to have been invented by Palamedes, the son of Nauplius, King of Euboea, for the amusement of the officers and soldiers during the siege of Troy ; but Herodotus assigns the invention of both dice and chess to the Lydians, a people of Asia, in the reign of Atys. Various kinds of dice, similar to ours, were discovered at Herculaneum. The Romans were acquainted with the secret of *cogging* dice. In the middle ages the dice were spotted with gold and silver. Our kings were partial to gaming with dice. *Hazard*, the *alea* of Suetonius, is a very ancient game. *Raffing* with dice is also of great antiquity.

The *dice-box*, the *fritillia* of the Romans, was made in the shape of a funnel, the interior being fluted, to agitate the dice and prevent false throws.

DICTIONARY. The oldest Latin Dictionary was compiled by Solomon, bishop of Constance, about the year 1410.

DISPENSARY. During the early ages the monks were accustomed to practise the healing art, and had small depots of medicine in their monasteries; the first regular dispensary, from which medicine was distributed to the poor gratuitously, was established in the ducal palace of Statgard, in the sixteenth century.

The charitable dispensation of medicines by the Chinese is well deserving notice; they have a stone which is ten cubits high erected in the public squares of their cities, and on this stone is engraved the names of all sorts of medicines with the price of each: when therefore, the poor stand in need of any relief, they go to the Treasury where they receive the price each medicine is rated at.

DISPENSATORY. The first book written for the use of apothecaries, was according to Beekman, drawn up by Valerius Cordus, or at least his was the first made known by the approbation of public magistrates; in which the word dispensatorium was made use of for a collection of receipts, with directions how to prepare the medicines most in use.

DISTILLATION. The Egyptians were well acquainted with the method of distilling in the time of Dioclesian, who began his reign A. D. 287, and being enraged at them on account of an insurrection, is said to have burnt their writings relating to the distilling of gold and silver. It is certain that this art was not known to the ancient Greeks and Romans, since neither Pliny nor any other Latin or Greek writer makes mention of it. The African Moors, in their conquest of Spain, introduced this important branch of chemistry into Europe, in the middle of the twelfth century.

DIVING. Anciently a class of people called divers were employed to recover goods thrown overboard, and allowed a share of the wreck proportionate to the depth to which they

had gone in search of it; and we read that when Alexander invested Tyre, his works were considerably damaged by the divers of that city. Extraordinary accounts have been given of the length of time that the divers employed in the pearl-fishery could continue under water: and many attempts have been made to discover some method by which it could be rendered more safe and easy. Those who dive for sponges in the Mediterranean, derive some advantage by carrying down sponges dipt in oil in their mouths; but this, from the small quantity of air contained in the pores of a sponge, can not afford any great assistance.

The earliest information we have of any machine resembling the *diving-bell*, is to be found in Aristotle, who informs us of a kind of kettle, by which the divers could supply themselves with fresh air under water; and it is related by Jerome that Alexander the Great entered into a machine called a *colympha*, having a glass window to it, in which he descended to the bottom of the ocean. The application of the *diving-bell* in Europe is first noticed by John Tasnier, who had a place at court under the Emperor Charles V., whom he attended on his voyage to Africa: he relates that he saw at Toledo, in Spain, in the year 1538, and in the presence of the Emperor and several thousand spectators, two Greeks let themselves down under water, in a large inverted kettle, with a light burning, and rose up again without being wet. After this period the use of the *diving-bell* became generally known, and is noticed in the works of Sir Francis Bacon.

In the year 1687, the sum of £200,000 was recovered from a Spanish ship which had been wrecked on the coast of Hispaniola, by means of a diving bell, invented by William Phipps, the son of a blacksmith in America, who was afterwards knighted. Several improvements in the invention have been since made by Halley, Spalding, Joachim and others, by means of which a person may now by practice remain upwards of an hour under water.

DOCKS. Artificial basons with locks, enabling ships to lie afloat while loading or unloading, were first constructed in this country at Liverpool, in the commencement of the eighteenth century.

DOGS. Pennant observes, that the little Maltese dogs, called shocks, were as much esteemed as lap-dogs by the Greek and Roman ladies, as those of Bologna, which were so much in request in the time of Elizabeth, are among the moderns. The great household dog, the greyhound, so called from pursuing greys or badgers, the bull-dog, the terrier, and the large slow hound, are thought to be natives of Britain. Spaniels appear on the sepulchral monuments of ladies in the middle ages; the celebrated Robert Dudley, Earl of Leicester, was the first who taught a dog to lie down when within the scent of game.

DOVE. Although the construction of arches seems to have been known to both the Greeks and Romans, at least four hundred years before the Christian era; yet that species of it called the dome cannot be traced to an earlier period than the building of the Pantheon, in the time of Augustus; soon after which domes were common in the public buildings, and especially in the Eastern part of the Empire. It is not indeed improbable that the Romans introduced this style of architecture from the East, as it is of considerable antiquity both in China and Persia. The dome of the Santa Sophia at Constantinople, was constructed in the reign of Justinian, that of St. Peters in Rome, in 1513, and St. Paul's in London in 1710.

DOMESDAY-BOOK. The first general survey of the land and property of England, was undertaken by order of Alfred in the commencement of the tenth century, and was deposited in the Cathedral of Winchester, and in existence in

the reign of Edward IV. William the Conqueror directed a new survey to be made in 1081, which was finished in 1087, and is called the Book of Domesday; it was directed to be kept in the Chapter House of the Abbey of Westminster, under the custody of the Chancellor and two Chamberlains of the Exchequer, and any one may consult it on paying a small fee.

DOWER. This provision for the widow was first ordained by Swein, king of Denmark, father of our Canute the Great, out of gratitude to the Danish ladies, who sold their jewels to ransom him when taken prisoner by the Vandals, and was brought into this country by the Danes.

DOXOLOGY. The Gloria Patri was introduced in the church service, by the Catholics of Antioch called Eustathians, about the middle of the fourth century.

DRAGOONS. This term was formerly given to such regiments of cavalry, as were also exercised in the Infantry movements, and occasionally fought on foot; they are first noticed in England in the commencement of the seventeenth century, when they had buff coats and gambado boots. The first regular regiment of dragoons was raised in 1683, and called the Scotch Greys.

DRAMA. The first dramatic representations were exhibited by Susarion on his stage, about 580 B. C.; and Thespis on his cart, who performed the tragedy of Alcestes, 536 B. C.

Heddin informs us that the word *tragedy*, is derived from the Greek *tragos*, a goat, and *odee*, a song, and originally consisted of an hymn, sung by several persons in honour of Bacchus, to whom the goat was sacrificed.

Thespis, in order to ease the chorus, introduced a person or actor, to recite, as occasion required, something to amuse

the audience : *Æschylus* added a second person to keep up a dialogue, and gave to his actors appropriate clothing for the characters they were to assume : *Sophocles* brought forward a third ; and thus the *dramatis personæ* of the Greek stage was completed ; for no more than three persons were allowed in the same scene.

Prologues, explaining the subject of the drama, were introduced by *Euripides*.

The Greek plays were chiefly tragedies founded on the misfortunes of mankind, the vengeance of the Gods, and the submission due to them. The Romans delighted principally in comedies ; and in displaying the incidents which might naturally occur in society ; they consequently added very considerably to the number of the actors, and neglected the chorus of the Greeks.

The division of the drama into *acts* was introduced by the Romans ; and five acts to a play are recommended by *Horace* :

“ If you would have your play deserve success,
Give it five acts complete, nor more or less.”

The origin of dramatic entertainments in England may be traced to the theatrical exhibitions called mysteries or miracles, which were common in the twelfth century, being the representation of the miracles wrought by the holy confessors, and the sufferings of the martyrs : the first play of this description specified by name was called *St. Catherine*, and is stated by *Matthew Paris* to have been written by *Geoffry*, a Norman, abbot of *St. Alban's*, in 1110 : for the exhibition of these plays temporary scaffolds were erected in the churches or church-yards, and, according to *Strut*, consisted of three several platforms, raised one above another : in the uppermost sat God, surrounded by his angels ; in the second appeared the holy saints ; and in the last and lowest, mere mortals : on one side was a dark corner, meant to represent the infernal regions, from which the devils occasionally issued to amuse or terrify the spectators.

In the reign of Richard II. the parish clerks of London acted a play at Skinner's wells, which lasted three days, the king, queen, and many of the nobility being present at the performance. Another play was performed in 1400 at the same place, which continued eight days; the drama commencing with the creation of the world, and containing the greater part of the history of the Old and New Testament. Afterwards, when the mysteries ceased to be played, the subjects for the drama were not taken from historical facts, but consisted of moral reasonings in praise of virtue and condemnation of vice; the dialogue being carried on by allegorical characters, such as Good-doctrine, Charity, Faith, Prudence, Death, &c. Of this kind of play we have a specimen in the celebrated entertainment of Don Juan, which is a modernized morality, being taken from the old Spanish piece, entitled "*El comedido de Piedra*:" to this succeeded plays, founded on the probable occurrences of life; and the first attempt of our modern tragedy is to be found in "*Gorbodue*;" otherwise called "*Ferrax*," and "*Porrax*," written by Lord Buckhurst in 1560; though, in fact, this was a melo-dramatic exhibition, being accompanied with music and dumb shew; and "*Gammer Gurton's Needle*," written at the end of the sixteenth century, is considered as our first comedy: these plays were generally performed by itinerant actors or nobleman's servants, on temporary stages, erected in the yards of inns, even so late as the close of the sixteenth century.

Dryden has truly observed, that the present stage was not found, but created by Shakespeare, of which no one can doubt who considers, that of all the plays issued from the press prior to the year 1592, (when, there is good reason to believe, he commenced a dramatic writer), the titles are scarcely known, except to antiquarians, nor is there any one of them that will bear a second perusal.

Plays were frequently exhibited on Sundays; and this practice was not prohibited till 1628.

The actors first assumed the title of "*His Majesty's Servants*" in consequence of a license granted to them by James I. in 1603, previous to which they were styled the Servants of the Lord Chamberlain.

Both the *prompter* or book-holder, as he was sometimes called, and the *property-man*, were regular appendages of our ancient theatres.

It is well known that in the time of Shakespeare, and for many years afterwards, the female characters were represented by boys or young men. Sir William Davenant, in imitation of the foreign theatres, first introduced females in the scene; and it is stated that Mrs. Betterton first appeared on the public stage as an actress about the year 1663; soon after which, some plays, particularly the "*Parson's Weddings*," were represented entirely by women.

The amusements of our ancestors before the commencement of the play were of various kinds; while some part of the audience entertained themselves with reading or playing at cards, others were employed in drinking wine or ale, or smoking tobacco; a custom which, about forty years ago, was still common at the minor theatres.

Immediately before the exhibition began, three flourishes or pieces of music were played, or, in the ancient language, there were three soundings: music was likewise played between the acts, the band sitting in an upper balcony, over the stage-box.

The person who spoke the prologue was ushered in by trumpets, and usually wore a long black velvet cloak. The dress of the ancient prologue-speaker is still retained in the play that is exhibited in *Hamlet*, before the King and Court of Denmark.

An *epilogue* does not appear to have been a regular appendage to a play in Shakespeare's time, for many of his dramas are without it—at least they have not been preserved.

At the end of the performance the actors in the private

theatres kneeled down on the stage, and prayed for their patrons; and those belonging to the public theatres, for the king and queen: this prayer sometimes made part of the epilogue—hence probably the addition of *Vivant Rex et Regina* to the modern play-bills.

The prices paid in our old theatres in the commencement of the seventeenth century, were extremely low, the pit and gallery being only one penny: some of the gay gallants used to sit upon the stage on stools, and paid a shilling for their superior accommodation, which was also the price of a private box, then called a room. On the first day of exhibiting a new play, the prices of admission were sometimes raised; and this seems to have been occasionally practised on the benefit nights of authors.

It is uncertain at what time the usage of giving authors a benefit on the third day of the exhibition of their piece commenced; it however seems to have been an established custom in 1612; for Decker in the prologue to one of his comedies, printed in that year, speaks of the poet's third day. Southern was the first dramatic writer who obtained the emoluments arising from two representations; and Farquhar, or, according to others, Rowe, first received the advantages of a third representation:

The custom of passing a kind of censure on plays on their first exhibition, is as ancient as the time of Shakespeare; for no less than three plays of his rival, Ben Johnson, appear to have been *damned*.

Persons were hired to applaud both by the Greeks and Romans; and hissing and clapping of hands are of equal antiquity.

The most ancient play-houses were the *Curtain*, in Shoreditch, and the *Theatre*, in Blackfriars. In the time of Shakespeare, there were no less than ten theatres open, viz.: the Theatre, the Cock-pit or Phoenix, in Drury-lane; the Globe, the Swan, the Rose, and the Hope, on the Bank-side; the

Red Bull, at the upper end of St. John-street; the Fortune, in White-cross-street; one in Whitefriars; and another in Salisbury-court. Most, if not all, of Shakespeare's plays, were performed either at the Globe, or at the Theatre in Blackfriars. The time of acting during the reign of Charles, was about three in the afternoon; and flags were exhibited to invite company.

In the early part of Shakespeare's time, the want of scenery seems to have been supplied by the simple expedient of writing the names of the different places where the scene was supposed to lie during the progress of the play, in some particular part of the stage, and which names were disposed in such a manner as to be visible to the audience; for the mechanism of our ancient stage seldom went beyond a painted chair or a trap-door. In 1605 Inigo Jones exhibited an entertainment at Oxford, in which moveable scenes were used: but the theatres are principally indebted to Sir W. Davenant for their scenes, curtains, and other decorations.

Tickets of bone for admission to the theatre are ancient—some were discovered at Pompeii.

The ancients also affixed *play-bills* at the entrance of their theatre.

All theatrical representations and public amusements were suppressed by the Parliament from 1647 till 1656, when Sir W. Davenant procured permission to exhibit a kind of dramatic entertainment of "Declamation and Music" at Rutland-house, which was soon afterwards followed by the opera of the "Siege of Rhodes," in the same place.

DRUM. This musical instrument is stated by Le Clerc to be of oriental invention, and brought by the Arabians into Spain: originally the drum was made of brass. The kettle-drum was so called because it resembled the large kettle or boiler standing upon three short legs. Throughout Asia, kettle-drums of an immense size are carried across camels in the

trains of governors of provinces ; but are never sounded in cities, except at the royal palaces.

DUCK Hunting with dogs was a favourite amusement in the twelfth century. Decoys for ducks are noticed in the time of Henry VIII.

DUEL. The custom of deciding a quarrel by single combat, under the impression that Providence would not fail to declare itself in favour of the innocent, took its rise among the northern nations, and according to M. Godeau, was first introduced into Italy by the Lombards, towards the conclusion of the fifth century. In a short time it spread throughout the rest of Europe, and was generally resorted to as a mode of trial, where the evidence was not sufficiently conclusive to admit of a satisfactory judgment being pronounced by the civil judge.

This mode of trial was introduced into England, among other northern customs, by William the Conqueror, and it appears from Madox's History of the Exchequer, was so frequently resorted to, that the fines paid on these occasions made no inconsiderable branch of the King's revenue. The last trial of this kind was in the reign of Elizabeth. One was appointed to take place in the year 1631, between Donald Lord Rey, or Rhee, appellant, and David Ramsey, Esq., defendant, in the painted chamber at Westminster ; but that quarrel terminated amicably by the interposition of Charles I.

The practice of duelling was thus converted, by the sanction of the Governments, into a public mode of trial, but when the enlightened state of Europe would no longer admit of this superstitious method of judicature, and the established power of the crown enabled it to administer the laws with strict impartiality, the custom of private duelling was introduced as the only means of avenging such injuries of a personal nature, which could not be regularly noticed in a court of

law, and the origin of it is thus noticed by Robertson :—" At the breaking up of a treaty, in consequence of some misunderstanding between the Emperor Charles V. and Francis I., the former desired Francis's herald to acquaint his Sovereign, that he should henceforth consider him, not only as a base violator of public faith, but as a stranger to the honour and integrity becoming a gentleman. Francis, too high spirited to bear such an imputation, had recourse to an uncommon expedient to vindicate his character: he instantly sent back the herald with a cartel of defiance, in which he gave the Emperor the lie in form, challenged him to single combat, requiring him to name the time and place of the encounter, and the weapons with which he chose to fight; and Charles, not inferior to his rival in spirit or bravery, readily accepted the challenge; but after several messages between them, all thought of the duel was laid aside; however the example of two persons so illustrious, drew such general attention and carried with it so much authority, that it had a considerable influence in introducing an important change in manners all over Europe, and led to duels which at first could be appointed by the civil judge alone, to be fought without the interposition of his authority, and in cases to which the laws did not extend."

Private duelling with small swords is first noticed in England in the year 1558. (*Vide Fencing.*)

The most remarkable duel in our history was that between his Royal Highness the Duke of York, and Colonel Lennox, (the then nephew and heir of the Duke of Richmond,) on the 26th May, 1789. The dispute originated in an observation of his Royal Highness, namely, that "Colonel Lennox had heard words spoken to him at the club at Daubigny's, to which no gentleman ought to have submitted." This observation being reported to the Colonel, he took the opportunity while his Royal Highness was on the parade to address him, desiring to know what were the words which he had submitted to hear, and by whom they were spoken. To this his

Royal Highness, at that time, gave no other answer than by ordering the Colonel to his post. The parade being over his Royal Highness went into the orderly room, and sending for the Colonel intimated to him, in the presence of all the officers, that he desired to derive no protection from his rank as a prince, and his station as a commanding officer; but that when not on duty he wore a brown coat, and was desirous to be considered in every respect as a private gentleman. After this declaration Colonel Lennox wrote a circular letter to every member of the club at Daubigny's, requesting to know whether any such words had been used to him, and appointing a day for an answer from each, intimating at the same time that their silence should be considered as a declaration that no such words could be recollected. On the expiration of the term limited for an answer to this circular letter, the Colonel sent a written message to his Royal Highness to this purport, that not being able to recollect any occasion on which words had been spoken to him at Daubigny's, to which a gentleman ought not to submit, he had taken the step which appeared to him the most likely to gain information of the words to which his Royal Highness had alluded, and of the person who had used them; that none of the members of the club had given him information of any such insult being in their knowledge, and therefore, he expected, in justice to his character, that his Royal Highness should contradict the report as publicly as he had asserted it. This letter was delivered to his Royal Highness by the Earl of Winchelsea, and the answer returned not proving satisfactory, a message was next sent to his Royal Highness desiring a meeting, the time and place for which were settled that evening.

The following authenticated account of the duel was given by the noblemen who were present on that occasion :—

In consequence of a dispute of which much has been said in the public papers, His Royal Highness the Duke of York, attended by Lord Rawdon, and Lieutenant Colonel Lennox,

accompanied by the Earl of Winchelsea, met at Wimbledon common ;—the ground was measured at twelve paces ; and both parties were to fire upon a signal agreed upon : the signal being given, Lieutenant Colonel Lennox fired, and the ball grazed His Royal Highness's curl : the Duke of York did not fire : Lord Rawdon then interfered, and said " That he thought enough had been done." Lieutenant Colonel Lennox observed " That His Royal Highness had not fired." Lord Rawdon said, " It was not the duke's intention to fire : His Royal Highness had come out upon Lieutenant Colonel Lennox's desire, to give him satisfaction, and had no animosity against him." Lieutenant Colonel Lennox pressed that the Duke of York should fire ; which was declined, upon a repetition of the reason. Lord Winchelsea then went up to the Duke of York, and expressed his hope " That His Royal Highness could have no objection to say, he considered Lieutenant Colonel Lennox as a man of honour and courage : " His Royal Highness replied, " That he should say nothing : he had come out to give Lieutenant Colonel Lennox satisfaction, and did not mean to fire at him : if Lieutenant Colonel Lennox was not satisfied, he might fire again." Lieutenant Colonel Lennox said, " He could not possibly fire again at the Duke, as His Royal Highness did not mean to fire at him." On this both parties left the ground. The seconds think it proper to add, that both parties behaved with the most perfect coolness and intrepidity.

(Signed)

RAWDON.

WINCHELSEA.

Tuesday Evening, }
May 26, 1789. }

In August 1808, Major Campbell and Captain Boyd fought a duel in a room without seconds, and Captain Boyd was killed. The Major, in consequence of expressions made use of by Captain Boyd on his death-bed, was tried for murder and executed.

DUKE. During the Saxon times the officers and commanders of armies were, according to Camden, called dukes, *duces*, after the ancient Roman manner, without any addition; but after the Conquest, the title lay dormant, or was synonymous with that of earl till the reign of Edward III., who, in 1337, created his son, Edward, called the Black Prince, from the armour he wore, Duke of Cornwall, which title hath ever since been the peculiar inheritance of the king's eldest son, during the life of his father; afterwards the king's other sons were created dukes, under the titles of Clarence, Lancaster, York, and Gloucester, in such manner as that their titles descended to their posterity: however, in the reign of Queen Elizabeth, A. D. 1572, the whole order of dukes became utterly extinct, and continued so for about fifty years, when it was revived by her successor James I., in the person of his favourite, George Villiers, whom he created Duke of Buckingham.

The first instance of the title of *Duchess* is in 1397, when Margaret, Countess of Norfolk, was created Duchess of Norfolk, in full Parliament; which at that time was the common mode of creating peers; nor does it appear that any writ was necessary; but that the person advanced to the rank, after undergoing the usual ceremonies of investiture, had his patent delivered to him, and did homage to the king.

DYEING. The art of colouring cloths and other substances, is of that antiquity as to render it impossible to give any satisfactory account of its origin; it is probable that the ~~jules~~ of certain fruits, leaves, &c. accidentally crushed, furnished the first hints of dyeing, which at an early period was carried to considerable perfection in the East; and in some instances superior to what the moderns, with all the aid of chemistry, have been enabled to effect; we read that blue, purple, crimson, scarlet, and scarlet double-dyed, are colours particularized for the decoration of the tabernacle, and for the embellishment of Aaron's pontifical habit.

The Tyrian purple, an animal juice found in a shell-fish called *murax* and *purpura*, on the coast of Tyre, is the most ancient dye recorded in history. The discovery of the tinging quality contained in the fish, was owing to a dog having caught one in the rocks, and by bruising it stained his mouth with the liquor, which appeared of so beautiful a colour to the eyes of a Tyrian nymph, that she refused her lover, Hercules, any favours till he had brought her a mantle of the same colour. This event is stated to have happened fifteen hundred years before the Christian *Æra*, and fortunately for Hercules he succeeded in procuring a sufficient number of shells to colour the robe for his mistress.

The Greeks had made but little progress in the art of dyeing, till the conquests of Alexander, and the discoveries resulting from his invasion of India, had opened new resources to them; for the art of printing calicoes had been for many ages practised in India; and flowered cloths or chintz were common in that country at the period of Alexander's invasion. The Greeks in general, however, despised the useful arts, and the Romans paid but little attention to them, for the use of vegetable dyes, was, in a great measure, unknown to them, though their neighbours, the Gauls, according to Pliny, imitated all colours, even the Tyrian purple, and the scarlet, by means of certain herbs: Pliny also notices the Egyptian method of dyeing linen, by staining the white cloth with certain drugs, which exhibited no appearance of dye till it had been sometime boiled in a cauldron, but when drawn out was found to be painted or stained of various colours; and what is most extraordinary, Pliny adds, is that the cauldron containing only colour of one kind, should impart to the cloth shades of various hues, according to the nature of the drugs previously laid on it.

On the general dissolution of the Roman empire in the fifth century, the art of producing permanent colours on cloths was totally lost; nor was it recovered till the period of the Crusades, when Europe became a *second time* indebted to

the East for her knowledge of the different drugs necessary for that purpose.

The Jews in the middle ages were the principal people who carried on the business of dyeing, having formed several establishments or dyeing-houses in the Levant, which about the middle of the thirteenth century they introduced into Italy, under the denomination of *tincta* or *tintoria*, and from which the Popes derived a considerable portion of their revenue. Italy, and especially Venice, for about three centuries, almost exclusively practised the art of dying, having discovered several valuable mordants for fixing the colours, as *archil* and *allum*, the process of manufacturing which they kept to themselves.

For many ages the art of dyeing in England was confined to the apparent colours produced from vegetable juices, the cloth being merely plunged into the coloured liquor, without any previous chemical process for fixing the dye being attended to; so late as the commencement of the seventeenth century the method of dyeing and dressing woollen cloths, was very imperfectly understood, for although a Company of Dyers was regularly incorporated by Edward IV., in 1473, yet Sir Walter Raleigh in his report on the state of the British commerce, submitted to James I., in 1603, observes, that there were upwards of eighty thousand undressed and undyed cloths annually exported from England, and also fifty thousand bays and Devonshire kerses, which were sent to Amsterdam, and there dyed, dressed, and shipped for Spain, Portugal and other countries, under the name of Flemish bays. The great difficulty seems to have been the discovery of proper mordants for making the colours permanent; for though the manufacturing of alum was about this time introduced into England, yet till the middle of the seventeenth century, the art of dyeing had met with no assistance from the experiments of the learned. The first work published on the subject being entitled, "An Apparatus to the-

History of the common practices of Dyers," by Sir William Petty, 1662; and it was not till about the year 1780, that the phenomena of dyeing were considered to be entirely dependent upon chemical affinities.

From time immemorial the nations of the east appear to have possessed a mode of dyeing silk handkerchiefs and other articles of dress by a rude but simple process, which is practised at this day, and has been adopted, and continues in use, in almost every part of Europe: it consists in tying knots with great address and nicety on the silk, in such a manner, that when dyed, the parts inclosed within the knot remain untouched. This mode of dyeing handkerchiefs was introduced by the Saracens into Spain, and in all probability was the first rude essay or attempt to imitate the printed linens of Egypt, and was succeeded by the mode now practised in India, of covering with a composition of wax and other ingredients, the parts intended to remain white—hence we may trace the origin of blue-dipping in indigo.

EAR-RINGS. The custom of wearing ear-rings is very ancient ; for we find some presented by the servant of Abraham to Rebekah : they also formed part of the spoils carried away by the Israelites, when they were expelled from Egypt ; and to this day throughout the greatest part of Asia, as well as in most parts of Africa, this ornament is worn as well by the men as women. The Romans confined the wearing of them to the females and slaves : but Julius Cæsar in his youth having taken a fancy for ear-rings, the custom of wearing them became general among young men of family until the time of Alexander Severus, who abolished it as effeminate. The Gauls also esteemed them as an ornament ; and ear-rings have, at various periods, been fashionable in France with gentlemen, and even now are not totally laid aside.

Ear-rings were worn by the ancient Britons and Saxons, and called *pendentes* in the middle ages. The custom of *boring* the ears took place in the commencement of the seventeenth century.

The *ear-trumpet*, according to Buckman, was invented by Porta about 1570. *Ear-picks* were used by the Romans. Queen Elizabeth had one of gold, adorned with jewels.

EARL. This ancient and distinguished title was in use among the Saxons under the name of *Earldorman* or *Elderman*, signifying the same with Senior or Senator among the Romans ; it was also equivalent to that of *Shireman*, as

having the civil government for a several division or shire ; or of Comites or Companions to the King, when the shires assumed the name of counties. Alfred was the first invested with the dignity of Earl, it having been conferred upon him by his father Ethelred, A. D. 867 : but the title was merely personal, and did not descend to the children, till William the Conqueror, soon after the battle of Hastings, made it hereditary in the family of William Fitz Osborne, whom he created Earl of Hereford and Lord of Wight, since which period the title has been regularly preserved.

The king, when he has occasion to mention any peer of the degree of an Earl in any public instrument, styles him "Trusty and well-beloved *cousin*," an appellation as ancient as the time of Henry IV., who being either by his wife, his mother, or his sisters, actually related or allied to every Earl in the kingdom, artfully acknowledged that connexion in all his letters and public acts.

Earls originally did, and still may use, the stile of *Nos* in their public letters.

Earl Marshall. The office and surname of Marshall was introduced at the Conquest. The earliest patent by which the appellation of "Earl" was added to Marshall of England, was that conferred by Richard II. in the year 1383, on Thomas Lord Mowbray, Earl of Nottingham. In October, 1672, Henry Howard, Earl of Norwich, was constituted hereditary Earl Marshall of England, and the title still continues in his family.

EASTER. The observation of this festival, originally called the *Paschal* day, because considered as the same with that on which the Jews celebrated their passover, is as ancient as the time of the Apostles ; it received the name of *Easter* from the circumstance of the festival occurring in the season that the Goddess Eostre was worshipped by the Saxons.

Towards the close of the second century, a dispute com-

mentenced about the particular time in which the feast of Easter ought to be observed, the Asiatic churches kept it on the fourteenth day of the first Jewish month, and three days after commemorated the Resurrection, being guided by the authority of the Apostles Philip and John, and the example of Christ, who held his paschal feast on the same day as the Jews celebrated their passover; while the western or European churches celebrated their paschal on the night preceding the anniversary of Christ's resurrection, and thus connected the commemoration of his death, and of his resurrection, and they pleaded the authority of the Apostles Peter and Paul. One principal inconvenience attending the Asiatic method was that this great festival was commonly held on other days of the week than the *first*, and therefore Victor, bishop of Rome, towards the close of the second century attempted to regulate the Asiatic churches by that of the European; but it was not till the year 325, that the desirable object of effecting an uniformity of holding Easter between the two churches was determined upon. In that year a council was held at Nice, by which it was decreed that the festival of Easter should be held on the Sunday which falls upon or next after the first full moon after the vernal equinox, or 21st of March.

ECLIPSE. The ancients had frightful ideas of eclipses, supposing them presages of the most dismal events; Plutarch assures us that at Rome it was not allowed to talk publicly of any natural causes of eclipses. The first eclipse mentioned in history is a lunar one, which was total, and is stated by Ptolemy to have happened at Babylon on the 19th of March, 721 years before Christ, and three hours, twenty-one minutes before midnight. The first solar eclipse observed was at Athens, on the 3d August, 481 B. C., and was nearly total, the sun being eclipsed eleven digits. Since which time to the year 1485, Struyk in his catalogue has recorded 133 total eclipses of the moon, and 14 of the sun.

The prediction of the solar eclipse by Thales, 558 B. C., is not to be relied upon ; however he is the first among the Greeks who is reported to have foretold eclipses.

EDUCATION. Before the invasion of the Romans the ancient Britons had among them various schools and seminaries of learning, which were wholly under the direction of the Druids, who, it is universally acknowledged, were celebrated both at home and abroad for their wisdom and learning, as well as for their probity, and were held in high estimation as the teachers both of religion and philosophy : but as they studiously concealed their opinions from all the world but the members of their own society, and were forbidden to commit any of their doctrines to writing ; when the living repositories of these doctrines were destroyed by the cruel policy of the Romans, under Suetonius Paulinus, A. D. 61, all their acquirements perished with them, and Britain was soon afterwards reduced to a state of complete barbarism.

The first school of which any account is given as established by the Saxons was at Crickdale, in Wiltshire, in 669 ; afterwards a college was founded at Rome by Ina, King of the West Saxons, for the instruction of the British youth, which college was supported by a tax of a penny, called Peter pence, from its being collected on each house throughout England on the day of St. Peter ad Vincula ; but on the death of Ina, the Popes appropriated this tax to themselves, and continued the collection of it with some intermission till the time of Elizabeth.

On the accession of Alfred to the crown he found his people so ignorant, that there was scarcely a layman who could read ; he therefore obliged his nobles to attend to the education of their children, directing that none who were illiterate should be admitted into any of the public offices, and he afforded them the means by founding the University of Oxford, and procuring learned men from abroad to superin-

tend it; but these universities or public schools, seem, nevertheless, to have been chiefly frequented by those who were intended for the church: for during the Saxon and Norman period, our illustrious youth were either educated at the court, or in the family of some powerful Baron, and very rarely at home, and this education principally consisted of military exercises; thus from the contempt of learning manifested by the laity, the clergy, even till the middle of the sixteenth century, were alone found competent to discharge the duties of the highest civil offices in the state.

Hebrew was taught in our Universities by some Jews in 1154; and on their banishment from the country many of their books were purchased by the monks, and the knowledge of it became more general.

Archbishop Nicholson states that at the commencement of the fifteenth century there were even bishops that could not write; so that in their subscriptions to synodal acts the following words are to be found:—"As I cannot read or write myself, N. M. hath subscribed for me."

The classics began to be studied on the Continent in the ninth century; the Latin Grammar being called the *Donat*, from Donatus, the grammarian. The Greek language and Homer was introduced into Italy by Boccacio about the close of the fourteenth century: but Professor Ockley, in his History of the Saracens, observes that the Greek language was not understood in the west of Europe till after the fall of Constantinople in 1453, when several learned Greeks escaping from thence caused the language to be more generally known: for previous to this time the learned contented themselves with Latin translations, not only of the Mahometan authors, but also of Aristotle and other Greek philosophers; which translations were not made out of the original Greek, but from Arabic versions that had been translated from the Greek.

The study of the Classics was brought into England by

Erasmus about the commencement of the sixteenth century, and became a fashionable pursuit among the nobility of both sexes during the reigns of Henry VIII., Edward VI., Mary, and Elizabeth. The unfortunate and innocent Lady Jane Grey, who, in 1554, at the early age of seventeen, was beheaded by order of Mary, was regarded as a prodigy in learning and useful acquirements. Besides the accomplishments incidental to her sex, she was able to write Greek with facility and eloquence, and was not only expert in the French and Italian languages, but had acquired a considerable knowledge of the Hebrew, Chaldee and Arabic; the general diffusion of knowledge, and the foundation of public schools, may be therefore ascribed to the middle of the sixteenth century.

ELECTRICITY. This word is derived from *elektron*, the Greek for amber, that being the first substance in which the existence of an electric fluid capable of being excited and accumulated was observed by Thales, of Miletus, who flourished 600 years before Christ. Electricity, however, considered as a science, is but of modern origin. William Gilbert, a physician in London, in the year 1600, being the earliest writer on the subject, he enumerates many substances, such as precious stones, glass and wax, as possessing attractive properties when excited by friction. Boyle, about the year 1670, first discovered that a diamond when rubbed with any kind of stuff, was not only electrical, but also emitted light in a dark room. Hawksbee in 1709, mentions the great electric power of glass, the light proceeding from it, and the noise occasioned by it, together with a variety of phenomena relating to electrical attraction and repulsion.

The first electrical machine was a globe of sulphur, constructed by the celebrated Otto de Guericke, Consul of Magdeburgh, about the year 1660: glass cylinders were shortly afterwards discovered to be much more powerful;

but the only rubber, for a long time, was the dry hand of the experimenter, till Mr. Winckler of Leipzig, in 1750, introduced the cushion, to which a silk flap was added, with an amalgam to increase the effect of friction.

About the year 1734, Stephen Gray discovered that on suspending pieces of metal on silken lines or attached to glass, and electrifying them, they gave sparks, which was the origin of *metallic conductors*.

The accumulation of the electric power by means of *coated jars*, was accidentally discovered by M. Von Kleist, Dean of the Cathedral in Commis, in 1745. An experiment of a similar kind, though under improved circumstances, was afterwards made at Leyden, by Mr. Cuneus, which being attended with success, procured for it the name of the *Leyden Phial*. Mr. Galath, a German electrician, contrived a plan to increase the strength of the shock, by altering the shape and size of the phial, and also by charging several phials at the same time, so as to form what is now called the *electrical battery*.

The discovery of the identity of lightning with the electric fire was made by Franklin; and to him we owe the practical application of this discovery, in securing buildings from the damage of lightning, by the erection of *metalline conductors*; for although the fact of the power of points to attract the electric fluid from a great distance was not unknown to the ancients, yet it had long sunk into oblivion.

Electricity was first applied to medical purposes by Kratzenstein, at Halle, in 1744.

ELL, a standard or measure for cloth, first determined by the length of Henry I.'s arm, in 1101.

EMBALMING. This mode of preventing the putrifying of dead bodies by means of balm and other odoriferous drugs, was early adopted by the Egyptians, and we find

that forty days were employed in embalming Jacob. This art however has been long lost; for the present method of embalming in Egypt differs very much from the ancient, and is supposed by no means so effectual. The custom of preserving the bodies of our kings by means of spices is of great antiquity.

EMBROIDERY. The art of working upon cloth with the needle, and embroidering figures of various kinds with different coloured threads, is of a very ancient date, being taught by the Egyptians to the Israelites. If we may judge of the perfection to which this art was carried, by the decorations of the Tabernacle, we shall form no mean opinion of its excellence. The curtains of the tabernacle, and the veil of the ark, were made of the finest linen interwoven with threads of various colours, and embroidered with cherubim. The hangings also for the door of the tabernacle, were composed of blue, of purple, of scarlet, and of fine-twined linen, wrought with needle work. The ephod also and the tunic which formed part of the official habit belonging to Aaron, were made of the finest materials, and richly adorned with embroidery. Beckman, however, conjectures that the ancients had no method of forming these threads by wire-drawing as now practised, which is an invention of the fourteenth century, but that the gold was first beaten by a hammer into thin plates or leaves, and then by some sharp instrument cut into small slips or threads, and that originally, it is probable that slips of gold were sewed upon the cloths, and particularly on the seams, as is still practised with lace; however, the mantle taken by Dionysius from the statue of Jupiter, about 350 B. C., was wove entirely of gold threads, without the addition of any other materials.

Embroidery with silver thread is not noticed by the ancients, but appears to have taken its rise after the removal of the seat of government to Constantinople.

The Romans called the embroiderers *Phrygiænes*, giving the credit of the invention to the Phrygiæns.

The Anglo-Saxon ladies were so famous for their skill in the art of embroidery, that their productions of the needle were highly esteemed in foreign countries, and called by way of eminence, the *English work*. In a charter which Wiglof, king of Mercia, granted to the Abbey of Croyland, mention is made of the King's golden veil, embroidered with the history of the destruction of Troy, which he gave to the said Abbey, to be hung up annually in the church, on his birthday.

At first threads exceedingly massy were employed for weaving and embroidering; and large tassels, the threads of which are of pure gold, were discovered at Herculaneum. The period when gold wire was spun round silk or linen thread, by which embroidery is rendered so much cheaper, is not known, but is supposed to have been invented in Italy, about the middle of the sixteenth century.

EMERALD. This mineral is supposed to be the *Smaragdus* of the ancients. Pliny ranks it in value immediately after the diamond and pearl. The emeralds of the ancients were procured from Ethiopia, but they are now only to be found in Peru.

EMPEROR. This title was originally conferred by the Romans on their general in the field of battle, when any decisive advantage had been obtained. Octavius Augustus was the first who assumed the appellation as a civil honour, expressive of an absolute monarch, or supreme commander of the empire. Charlemagne, in imitation of the Roman Emperors, was proclaimed Emperor of Germany in 800, when this title continued hereditary in his family till 996, when it became elective, and was totally abolished in 1804, and that of Emperor of Austria taken in its stead.

ENAMELLING. The art of painting in enamel, or with metalline colours, and fixing them by fire, was practised by the Egyptians on earthen vessels or potter's ware, from whom it passed to the Greeks and Romans. In modern times we hear of beautiful vases made in the territory of the king of Tuscany, during the reign of Porsenna.

In 1632, Jean Tontin, a Frenchman, invented an opaque or thick enamel, wherein the colours, instead of being ground up in water, are mixed with oil of spike, which retain their lustre, though exposed to a powerful heat; to this invention we are indebted for all our modern fine pieces of enamel, particularly those curious ones in gold, representing portraits, and even history pieces, which are equal to the best oil paintings, with this great advantage that their beauty and lustre never decay.

That the Britons received the art of enamelling from the Romans, may be presumed from the circumstance of enamelled trinkets having been discovered in British barrows; and that the Saxons practised it, is ascertained from the jewel made by command of Alfred, and now preserved at Oxford. The gold cup given by John to the Corporation of Lynn, in Norfolk, proves that the art was not lost under the Normans, for the sides of the cup are embellished with various figures, whose garments are partly composed of coloured enamels; the beautiful crosier of William of Wykeham, of the time of Edward III., also exhibits some curious specimens of the application of this art.

ENCAUSTING. This art, which by some is taken to be a species of enamelling, was an ancient mode of painting on wax, previously bleached and thrown into a lye of natron; afterwards the picture was exposed to a heat sufficient to diffuse the wax through all the particles of the colours, by which the painting was secured from the destructive effects of the atmosphere. This invention, it is conjectured, origi-

nated in Egypt, as several of the bandages and coverings of the mummies are painted in this manner, and the word itself, *mumma*, is supposed to be derived from *mum*, signifying wax. Count Caylus, a member of the Academy of Inscriptions, in France, revived this art in the year 1753.

ENGINEER. The term in a military sense was first used in 1650, when Captain Thomas Rudd was appointed chief Engineer to the King, previously to which the Chief Engineer was stiled Camp-Master-General, and subordinate to the Master of the Ordnance. The order of artists entitled *Civil Engineers*, had its rise about the year 1760.

ENGLAND. The Southern part of Britain was called *Angla* in the time of the Venerable Bede, probably from its having been chiefly occupied by that description of Saxons called *Angles*, an ancient tribe of the Suevi, who in the time of Cæsar were the bravest of the German nations. Egbert, in a council held at Winchester, in 835, abolished the distinctions of Saxons, Juts, and *Angles*, directing that his subjects should for the future be called English, and his kingdom England.

The *language* anciently spoken in our island was the British or Welsh, also common to the Gauls, from whence it was derived. The Romans introduced the Latin tongue, but their short stay did not admit of its being firmly established, and it was easily-superseded by that of the *Angles*, who by continued reinforcements almost entirely peopled the South of Britain with their own countrymen, driving the natives into the Western parts or beyond sea.

The oldest Saxon writing in being is of the year 700, by Eadfride, Bishop of Holy Island, of which the following is a specimen :—"Uren Fader thic arth in heofnas sic gchalgud thin noma to cymuth thin rye, Sic thin willa sue in heofnas and in earthro, &c." This new language remained, in a great

measure, pure and unmixed, till the invasion by the Normans, who conceived that the conquest was not complete unless the conqueror's language, the French or Franco-Gallic, were introduced: but the attempt proved as unsuccessful as that of the Romans; the number of Normans being small in comparison with the Saxons; so that the Norman tongue, in course of time, amalgamated with that of the Saxons, and was only preserved in their public records. About the time of Henry II. this mixture of Roman, Danish, Saxon, and French languages began to assume the form of the present English, of which the Pater Noster in rhyme, by Adrian, an Englishman, in 1160, and afterwards Pope, is an example:—

“ Ure faden in heaven rich,

Thy name be haljed ever ligh.”

Among the earliest instances of the use of the English language at the Court of the Norman monarchs, is the distich painted on the shield of Edward III., under the figure of a white swan, being the device which that warlike king wore at a tourney at Windsor:—

“ Ha! ha! the white swan,

By God his send I am thy man.”

The first of our authors who can properly be said to have written English is Sir John Gower, who, in his “Confession of a Lover,” calls Chaucer his disciple.

How the English stood in the year 1400 may be seen in Chaucer, who refined and improved it very considerably; but it was not till nearly the middle of the sixteenth century, that the language had arrived to any degree of classical elegance and perfection.

The most ancient record in the English tongue is the Confession of Richard, Earl of Cambridge, in the reign of Henry V., A. D. 1415, and which is inserted in Rymer's *Fœdera*.

ENGRAFTING. The art of fixing a cyon or bud of one

tree into the stock of another, formerly called incision, is of considerable antiquity, and one of the principal operations in gardening, wherein the goodness of the fruit depends. Theophrastus informs us, that it originated from a bird having accidentally deposited some seed into a cleft or cavity of a rotten tree, where, mixing with some of the putrified parts of the wood, and being washed with the rains, it budded and produced within this tree, another of a different kind. Pliny's account is, that a husbandman being desirous of surrounding his grounds with a pallisade, began to strengthen it by running or wailing it with the trunks of ivy, the effect of which was that the stakes of the pallisade took root in the trunks of ivy, and in the course of time produced large trees.

ENGRAVING. The art of cutting figures or letters on solid bodies, either complete in itself, or for the purpose of affording prints or impressions on paper, is divided into several branches, each of which has its appropriate appellation; but that by which the application of the graver is confined to metals or precious stones, retains alone the primitive denomination of engraving.

The art of representing figures or devices, either in relievo or indented, on precious stones or gems, is probably more ancient than that of letters on seals, and was one wherein the ancients greatly surpassed any thing that the moderns have been able to produce. It is doubtful whether this art originated in India or Egypt, but the Scarabœi, or the engraved figure of the beetle on the Egyptian gems, (generally the cornelian or sarda,) is the most ancient of which we have any satisfactory information, and these again are more frequently noticed as intaglios than cameos.

The Greeks received their knowledge of engraving from the Etruscans, who had acquired it from the Egyptians; and Theodore of Samos, who flourished about 740, B. C., is said to have engraved the famous emerald, which Polycrates threw

into the sea ; but Pyrgoteles, who alone was permitted to engrave the portrait of Alexander, is the most celebrated of the Greek engravers, and carried the art to the highest state of perfection.

Dioscorides, a native of Greece, was under Augustus, what Pyrgoteles was under Alexander, several sublime works of his being still in existence ; and the art maintained a considerable degree of reputation at Rome till the time of Septimius Severus, when it began gradually to decay.

During the middle ages the ancient gems, as representing idolatrous objects of worship, were no longer sought after, though many were employed for ornamenting the shrines in the churches, and thus some highly valuable antiques have been preserved. The glyptic art was not, however, totally lost in the dissolution of the Roman Empire, for both in Italy and in the provinces of the Greek empire, many gems, especially in relief, called cameos, representing various subjects from the Old and New Testament, were manufactured, as well for ornamenting holy vessels, as for prayer and other religious books, several of which, of the ninth century, richly decorated with engraved stones of the same period, are in the Royal Library at Berlin.

About the commencement of the fifteenth century the art of engraving on stones had so much recovered itself in Italy, under the patronage of Popes Martin V. and Paul II., and particularly under the fostering care of Lorenzo de Medici, that the works of the moderns were frequently taken for antiques by the cognoscenti themselves, and the Italian artists to this day have maintained their reputation.

The mechanical part of the art of engraving gems, such as it was practised by the ancients, differed in no respect from the method which is followed by the engravers of the present day, for according to the opinion of Natter, their tools were not only analogous to those of modern artists, but they used them under the same circumstances.

The art of engraving on stones was probably introduced into Britain by the Romans, for Matthew Paris states that the Roman Britons had cameos; few traces of it however are discovered until the reign of Alfred, at which time, according to Strutt, the Anglo-Saxon goldsmiths were the principal engravers, and the caskets which they made for the preservation of the relics of the saints, were ornamented with precious stones and engravings. In the Museum at Oxford is still preserved a valuable jewel of gold, adorned with enamelling, and a kind of fillagree work, in the midst of which is seen the half figure of a man, the back being ornamented with engraved foliage and flowers; and, from the unquestionable testimony of its own legend, this jewel is known to have been made at the command of Alfred, and was one of the few articles he carried with him when he retreated to the isle of Athelney, where it was found. Gems were valuable presents, and much esteemed by the Anglo-Saxons, and John among our Norman kings was a great admirer and collector of them, but the engraving upon them does not seem to have been a favourite occupation among the English, nor can they boast of any celebrated artists in that line.

One of the earliest uses of engraved gems seems to have been that of affixing them to rings, as the symbol of royalty—thus Pharaoh gave his ring to Joseph, investing him by that means with the power he intended he should exercise over all his people; afterwards rings became to be used as seals, and all public edicts received the impression of the royal signet, an instance of which occurs in the Old Testament so early as 900 B. C., when Jezebel sent letters sealed with the seal of Ahab to authorize the destruction of Naboth: but it is presumed that these seals were merely intaglios, representing some device impressed on wax or soft metal, and attached to the letter by silk or thread, as was customary with the Greeks and Romans, and introduced into this country by the Normans, and that they were not composed of literal

characters reversely engraved for the purpose of affording impressions on paper by means of ink, as now practised throughout Asia; otherwise it would seem incredible that an art, so nearly allied to copper-plate printing, could have existed for so many ages, without being extended to purposes of greater utility; nevertheless the Asiatic seals are of considerable antiquity, and were common during the period of the crusades; though it may be necessary to observe that the method of forming the impression is by smearing the face of the seal with lamp-black or ink, and leaving the engraved part untouched, so that the inscription appears in white characters.

From the time, therefore, of the crusades, Europe became acquainted with a method of engraving, from which ink might have been delivered and impressions multiplied; and in this country there are several engraved brass plates on sepulchral monuments, entirely executed with the graver, so early as 1340; yet another century elapsed before any one thought of procuring impressions from engravings; and it is now doubtful whether accident or design, and whether Italy or Germany, had the honour of giving birth to this invention.

The Germans assert that the origin of engraving is to be traced to the brief-makers or makers of playing cards in Germany, who struck off the impressions from wooden blocks about the beginning of the fifteenth century; though the Dutch pretend that the art of taking off impressions on wood was discovered by Lawrence, of Haarlem, who died about the year 1437.

The invention of engraving from copper-plates is generally ascribed to Muso Finiguerra, a goldsmith of Florence, about the year 1460, and is thus noticed:—"Finiguerra having been accustomed to take impressions of every thing that he cut, by means of clay or other composition, and to cast melted sulphur in this mould, at length perceived that what came out of the mould was marked with the same prints as his

plate, by the black which the sulphur had taken from his graving; he therefore tried to do the same on silver plate with wet paper, by rolling it smoothly with a roller, which being attended with success, is the origin of producing impressions upon paper in lines, in the manner that the prints are now done: this method was communicated by him to Baldini, a brother goldsmith of the same city, who by this means engraved several plates from drawings by Botticelli." The Germans however contend that the art was practised among them by Luffrecht Rust, of Schoen, in 1450. The earliest date of a copper-plate print is in 1461; but this has, by no means, the appearance of being the first production of the graver.

Impressions for plates, it is said, were first taken in England about the year 1540, when some copper-plate cuts appeared in a book called the "Birth of Mankind." The first portrait printed in England was the head of Archbishop Parker, by Remegius Hogenburgh; and a print of Queen Mary was published by his brother in 1555.

Etching, or engraving on copper-plates by means of *aqua-fortis*, was invented by Albert Durer, a German, in 1511, and introduced by Hollar or Vandyke into England in the time of Charles I.

The method of etching on *glass* is stated to have been discovered by George Schwankard, of Nuremburg, in 1670, and originated from the circumstance of some *aqua-fortis* having corroded his spectacles, from which accident he learned to make a liquid, by which he could etch writing and figures on plates of glass: at present, however, we are acquainted with no other acid which answers this purpose, except that of the sparry fluor discovered by Scheele in 1771, and of which impressions from glass plates have been taken by means of rollers.

Engraving in *dots* was first used by Agostino de Musis, an Italian, in 1520; this has also been called engraving in the chalk manner, or stippling.

Engraving in *aqua-tinta* was invented by Le Prince, a French artist, about the close of the last century, and was intended to imitate upon copper, drawings made with bistre or Indian ink.

In 1649 Prince Rupert, nephew to Charles I., invented a peculiar mode of engraving, called *mezzo tinto*; though Baron Henniker says that he acquired the art from Colonel Siegen, an officer in the service of the Landgrave of Hesse Cassel.

The method of etching upon stone for the purposes of procuring impressions, was only discovered about thirty years ago, and for near twenty years remained unnoticed: the origin of it is thus related:—"Alvisius Senefelder, a German youth, being desired by his mother to take some linen to be washed, for want of paper, wrote a list of it with his composition-ink on a polished stone, intending to copy it at leisure; this ink probably corroded the stone, and left the writing in a certain measure engraved upon it, which he discovered in his attempt to efface it, and immediately turned it to advantage, by applying a stronger acid to the writing, by which that part of the stone was eaten away to about the hundredth part of an inch, and the interstices being afterwards charged with printing ink, the present system of *lithography* was established, and in 1801 brought into England by Andre, under the name of *Polyautographic printing*; and was afterwards introduced in the Quarter-Master General's office, as a cheap method of printing plans and circulars. About the year 1819, Nicholson, the landscape painter, conceiving the art capable of considerable improvement, has by his exertions brought it into that high state of reputation which it now deservedly enjoys.

ENVOY. This diplomatic agent is first noticed about the close of the sixteenth century. In the year 1639 the Court of France made a declaration that the ceremonies of conducting Envoys Extraordinary to their audience, in the King and

Queen's coaches, as was customary with Ambassadors, should be no longer practised, and when St. Justiani, the Venetian Envoy, offered to cover himself in the presence of the King, it was not permitted, the King himself declaring that he did not expect his Envoy Extraordinary at the Court of Vienna, should be regarded any otherwise than as an ordinary resident.

EPHEMERIDES. A regular series of astronomical tables has been preserved in the National Library of Paris, from the year 1442. The first Nautical Almanac or Astronomical Ephemeris in England, was published under the direction of the Commissioners of Longitude in 1767, and has been regularly continued.

EPITAPH. The Athenians by way of epitaph, put only the name of the deceased, with the epithet, good; signifying their good wishes. It is doubtful whether the ancient Jews had any epitaphs on their monuments; the most accustomed form of epitaph of the early Christians, was the Alpha and Omega, being the first and last letters of the Greek alphabet, the symbol of eternity. *Orate pro anima*, was introduced in the tenth century.

ESQUIRE, first considered as a title of distinction in the reign of Richard II.

EVIL, or Scrophula. The Romans were accustomed to flatter their princes with the power of curing disorders, and Vespasian is represented by Suetonius as having by his touch, restored sight to the blind. The Kings of England and France have for several ages been supposed by the vulgar to possess the power of curing the scrophula by the touch; St. Louis being the first who practised it, and the Kings of England claiming the privilege, only as an appendage to that crown to which they considered themselves entitled.

On the other hand it is asserted, that Edward the Confessor was the first who assumed this power in England, though little notice is taken of it till the reign of the Stuarts. It appears from a register kept in the time of Charles II., that in the course of five years, from 1660 to 1664, he touched 23,601 persons, and from May 1667 to May 1684, 68,516 persons. The celebrated Dr. Samuel Johnson was touched by Queen Anne, his mother having been advised to bring her son to London for that purpose, by Sir J. Floyer, an eminent physician, and this practice of touching for the evil was not discontinued till the reign of George II.

EXCHANGE. A public place or building appropriated to the transaction of mercantile affairs, called the Collegium Mercatorum, was erected at Rome, under the consulate of Appian Claudius and Publius Servilius, about the year of the city 269 or 493 B. C. The Athenians also had in the Piræus, a place called Deigma, where the merchants were accustomed to assemble.

In Flanders, Holland, and several cities of France, these buildings are called Bourses, and the merchants used to frequent them so regularly, that the absence of any one was alone sufficient to make him suspected of a failure or bankruptcy.

Bills shewing the rate of exchange at the different foreign places of trade, were first published at Hamburgh, in 1659; and of the price of gold, in 1687; this, together with the rate of Insurance, is now added to the Price Currents.

EXCHANGE, Bills of. (*See Bills of Exchange.*)

EXCHEQUER BILLS, were first issued by Montague, Chancellor of the Exchequer in 1696, to supply the want of circulating cash during the re-coinage of that period, and this method of raising money has from its facility, and particularly its not requiring the previous sanction of parliament,

ever since been acted upon, and to it, in a great measure, is to be attributed our present immense debt.

EXCISE. A tax upon the commodities forming the necessities of life, was first resorted to by the Romans in the time of Augustus. The Earl of Bedford recommended a similar tax to Charles I., but it was not carried into effect till the year 1643, when it first took the name of Excise.

WITNESSES were first instituted by Romulus, who directed a kind of market should be held, under the superintendence of proper officers, for the purchase of cattle, on days of holding the laws promulgated, upon every ninth day - hence they were called by the Romans *Nundine*. About the eighth century these kind of meetings assumed the name of fairs, from their being held in houses where the wares or goods of the nation of churches, called fairs, were exhibited, in order that rights and privileges might be made subservient to the cause of religion. These fairs, though probably introduced by the Romans, are not however noticed till the time of Alfred, who made some regulations concerning them in 886, of which period the *Exchequer Courts* were established: upon these occasions disputes were reviewed and justice administered - they were also attended by judges and barons.

FALCONRY. Aristotle informs us that the art of fal-

FABLE. Homer and Hesiod frequently indulged in fables ; but Æsop, who flourished in the time of Solon, about 550 B. C., has, by his success, quite effaced all former fables, and may in fact be justly considered as the inventor of them ; unless, as some will have it, those attributed to him were in fact written by Socrates. Phædrus, a servant of Augustus, and Pilpay, a person of distinction in the court of an Indian king, are celebrated for their happy method of thus conveying instruction.

FAIRS were first instituted by Romulus, who directed a kind of market should be held, under the superintendence of proper officers, for the purposes of traffic, as also of hearing the laws promulgated, upon every ninth day : hence they were called by the Romans *Nundinæ*. About the eighth century these kind of meetings assumed the name of fairs, from their being held in places where the wakes or feasts of the dedication of churches, called *feriæ*, were celebrated, in order that trade and pleasure might be made subservient to the cause of religion. These fairs, though probably introduced by the Romans are not however noticed till the time of Alfred, who made some regulations concerning them in 886, at which period the Pie-powder Courts were established : upon these occasions booths were erected and public shews exhibited—they were also attended by jugglers and buffoons.

FALCONRY. Aristotle informs us that the art of em-

playing birds of prey in the pursuit of game had its origin among the Persians, and was common among the Grecians.

It is said that the primitive Britons were much attached to hawking, every chief among them maintaining a considerable number of birds for that purpose; and that the Romans borrowed this diversion from the Britons: however this may be, it was certainly known at an early period in this country; for Ethelbert in the year 760 received a present of one hawk and two falcons from Winefred or Boniface, Archbishop of Mens. Under the Norman Government none but such as were of the highest rank were permitted to keep hawks; and Edward III. made it felony for any one to steal a hawk; and to take its eggs, even in one's own ground, was punishable with imprisonment for a year and a day, besides a fine at the king's pleasure. Hawking continued to be the fashionable diversion of the nobility and gentry during the reigns of Elizabeth and James, when a thousand pounds was given by Sir Thomas Marson for a pair or cast of hawks.

FAN. This little instrument for putting the air in motion was used by the Romans, and is noticed by Ovid. Fans made of ostrich and other feathers, set in gold or silver, were common in the time of Elizabeth. According to Evelyn, our modern paper fans were introduced by the Jesuits from Japan and China.

FAST. This method of penance by abstaining from food seems to have been practised by almost every nation, from the earliest antiquity, and to have been adopted by the Christians in the time of the apostles, at which period Morheim is of opinion the Wednesdays and Fridays were considered as days of fasting.

FEATHERS. The fashion of wearing feathers on the head was brought from France in 1780.

FENCING. The method of using the small-sword or rapier was first taught about the middle of the sixteenth century by the Italians, who made a great mystery of their art, never suffering any but the scholar to be present, and even examining closets, beds, and other places of possible concealment.

FIDDLE. The earliest mention of this musical instrument in England is in the legendary tale of St. Christopher, written about the commencement of the thirteenth century—

“The king loved the melody of fithels and of songs.”

It is also noticed by Chaucer; but was not common till the time of Charles II., who, in imitation of Louis XIV., established a band of twenty-four fiddlers.

FIFE. This instrument was brought into France by the Swiss, after the battle of Marignan, under Francis I., and has ever since been admitted in regimental music.

FIGURES in Arithmetic. The numeral characters of the ancients were composed of the letters of their alphabet; thus the Greeks, in the time of Homer, or soon after, are supposed to have assigned to their letters a numerical value, corresponding to their order in the alphabet; it being after this manner that the books of the *Iliad* and *Odyssey* are numbered: but how the Roman numerals originally received their value is not accurately ascertained; for as not above one-third of their letters are numerals, so neither is the numeral value of those that are so, more or less, according to their place in alphabetic order; for D and C, which are among the first letters of the alphabet, and M and L, which are in the middle, are of much greater numeral value than X and V, which are near the end. An ingenious author has therefore endeavoured to trace the origin of their numeral characters as follows:—

“It is not improbable therefore that the Romans put down

a single stroke, I, for one, which they doubled, trebled, and quadrupled, till they came to five, which number they expressed by joining two strokes in an acute angle—thus, V; to this they added single strokes to the number of four, for six, seven, eight, and nine; and then, as the Romans could not be farther multiplied without confusion, they doubled their acute angle by prolonging the two lines beyond their intersection, X, to denote two fives or ten; after they had doubled, trebled, and quadrupled this double acute angle, to denote twenty, thirty, and forty, they then, for the same reason which induced them first to make a single angle, and then to double it, joined two single strokes in another form, to denote fifty, L: when this fifty, with the addition of the X, amounted to ninety, they then doubled the right angle, C, to denote a hundred; and having numbered this double right angle four times, for one, two, three, and CCCC four hundred, when they came to the five hundred they reverted the double right angle, and put a stroke before it, D; and when they came to nine hundred D.CCCC, in order to make the thousand they set down two double right angles opposite each other, with a single stroke between them, CD; when this note for one thousand had been four times repeated, then they put down CD for five thousand; CCDD for ten thousand; CDD for fifty thousand; CCDD for one hundred thousand; DDD for five hundred thousand; and CCCCDDDD for one million.

“That the Romans did not originally write M for one thousand, and C for one hundred, but square characters as they are written above, we are expressly informed by Paulus Manutius; but the corners of the angles being cut off by transcribers for dispatch, these figures were gradually brought into what are now numeral letters. When the corners of CD were made round, it stood thus—C̄D̄, which is so near the Gothic (C) that it soon deviated into that letter; so D̄ having the corners rounded, D̄, easily deviated into D; also

[by the same means was turned into C ; the single right angle which denoted fifty, was, without any alteration, the capital L ; the double acute angle, an X, and the single one, a V consonant, and a plain single stroke, the letter I : thus these seven Roman letters, M D C L X V I, became numerals."

The numeral character now commonly used in Europe is the Arabic, so named from its having been supposed to have originated with the Arabian astronomers : but the honour of the invention appears to belong to the Indians ; and Aben Ragel, an Arabian author of the tenth century, expressly ascribes the invention of this scheme of arithmetic to the Indian philosophers.

It is generally admitted that the Arabic figures were introduced into Europe by the Moors during their occupation of Spain ; but there seems to be considerable uncertainty as to the time when they became known in France and the neighbouring countries : some will have it that Gerbert or Girbert, a native of Auvergne, where he was a monk, travelled into Spain at the close of the tenth century, and there made such a progress in the Arabian philosophy, particularly mathematics, that he soon excelled his instructors ; and on his return into France carried with him the Arabic method of arithmetic, which he soon afterwards published in a treatise called "*Rythmomachia, or the Battle of Numbers and Figures.*" This Girbert was in the year 999 elevated to the Papal Chair, under the name of Sylvester II., and died in 1003.

Dr. Wallis, from some ancient dates, supposed to consist wholly or in part of Arabian figures, conjectures they were used in this country in the tenth century ; he notices that of 975 over a gate-way at Worcester ; 1011 on the north part of the parish church of Rumsey, in Hampshire ; 1016, with the Roman M for a thousand, at Wiggell-hall, near Buntingford, in Hertfordshire ; 1090 at Colchester, in Essex ; and M 133, that is, 1133, on a chimney-piece at Helmdon, in Northamptonshire ; but various objections against the autho-

rity of these dates have been urged by Dr. Ward, a celebrated antiquarian, who states, that the first authenticated account of the appearance of the Indian figures in manuscript, is in some copies of *Johannes de Sacro Bosco*, who died in 1236, and that it would be absurd to suppose these figures were in common use at a time when they were scarcely known to the learned; the Helmdon date, according to his opinion, should be 1233; the Colchester, 1490, that at Wildgell Hall, he says, has no Arabian figures, the 1 and 6 being I and G, probably the initial letters of the builder's name, and the date at Worcester consists of Roman numerals only, and is in fact MXV.

Astle, Du Cange, and Mabillon, however, will not admit of the introduction of the Arabic characters into France and England, prior to the fourteenth century, stating that one of the oldest dates that has been discovered in this character, is supposed to be in the hand-writing of the celebrated Petrarch, on his copy of *St. Augustin*, in the year 1375; and the appearance of them in charters before that period would invalidate their authenticity; it seems indeed now to be the general opinion, that these figures very rarely occurred in the fourteenth and fifteenth centuries, and that they did not become in general use till about the middle of the sixteenth century, at which time the forms of their cyphers were permanently fixed.

The rent-roll of the diocese of St. Andrews in Scotland, has the date 1490, in Arabic figures.

The proclamation of Henry VIII., in 1544, directing certain news pamphlets, to be destroyed within XXIII hours after the proclamation should have become known, is a proof that the Arabic characters were not in common use in public documents even at that period.

The College accounts, in the English Universities, were usually kept in the Roman numerals, till the middle of the sixteenth century. The Churchwarden's accounts of Schome,

a parish near Rochester, are entered in the same character, so late as the year 1621.

FILLIGREE. This kind of work which is beautifully wrought in gold or silver wire, twisted together so as to form festoons, flowers, and various ornaments, is of great antiquity, and was originally brought into Europe from the East. In the middle ages it was made use of in decorating the images of saints and other church furniture, and is now principally confined to the manufacturing of small caskets, needle-cases and trinkets; there was till lately to be seen, in an Abbey at Paris, a cross ornamented with filligree work, made by St. Eloy, who died in the year 665.

FIRE. As mankind, for some time after the creation, lived entirely on fruit and other vegetable productions, fire was not necessary for culinary purposes; and although sacrifices appear to be almost coeval with the birth of man, yet the acceptance of them was signified by the miraculous supply of fire from heaven.

The Egyptians attribute the invention of fire to Vulcan, who Boerhave conjectures was the Tubal Cain of the Hebrews, who first applied it to the fusion of metals, and in other chemical preparations. The Greeks state that Prometheus discovered the method of procuring fire, by the violent concussion of flint and steel, about 1700 B. C. Probably the most ancient method of procuring a flame was by the rubbing of two pieces of wood against each other, which method is still practised in many parts of the world; forests of bamboo are frequently set on fire, in India, during the period of the hot winds, by the constant friction of the branches against each other.

The *Greek Fire*, so celebrated in modern history, was invented by Callinacus, an engineer of Heliopolis, in Syria, and first made use of in a naval engagement, with the Saracens, in

660. This fire is described as a kind of liquid, forced out of a pump through pipes against the enemy, and as possessing the quality of burning with greater violence under water than above it. The Greeks, by various precautions, were enabled to keep the secret of its composition to themselves; for a period of four hundred years, till at length it was either discovered by or communicated to the Mahometans, who during the Crusades, employed it with such success, against the Christians, that it then assumed the new appellation of the *Saracen fire*: it finally however, submitted to the still more destructive discovery of gunpowder, and the composition of the ancient Greek fire is now totally unknown.

FIRE-arms. The first intimation we have of portable fire-arms, is that given by Bellus, a nobleman of Milan, who acquaints us that the garrison of Lucca, when besieged by the Florentines, in 1430, besides darts and ballistæ for arrows, had a new kind of weapon, consisting of a club about a cubit and a half long, having at one end an iron barrel, or small cannon, which they carried in their hands, and thus armed made frequent sallies against the Florentines, discharging their guns as they approached, and ultimately compelled them to abandon the siege. *Hand-guns* or *hange gunnes*, as they were then called, of a description somewhat similar to the above, were used by our soldiers, about the year 1460, having been introduced by some Flemings in the service of Edward IV.; these pieces were fired by a match carried in the hand; but afterwards the match was attached to a trigger in the stock, and brought down on a pan which held the priming, and then the weapon assumed the name of *harquebuss*. The next improvement was in the shape of the stock, by giving it the German bend or butt, which admitted of its being placed close to the shoulder; this took place in the commencement of the sixteenth century, and

the instrument was then called the *haggebutt* ; and in a short time the harquebuss from being a heavy unwieldy machine, of about twice the calibre of our blunderbuss, had got to the opposite extreme of being so small and light as to be of little use against the armour worn in those days, so that Henry VIII., in 1541, directed that no hand-gun or haggebutt should be used of less dimensions than one yard in length, gun and stock together. About this time also the demi-hagge, being about half the weight of the haggebutt, is noticed as being used for the purposes of fowling.

The *musket*, carrying a bullet of double the weight of the haggebutt, was introduced into England from Spain, about the middle of the sixteenth century, but at first was so long and heavy as to require a rest when fired ; this was discharged by a match, in the manner of the haggebutt, till about the close of Mary's reign, when the Spanish invention of the spring wheel lock, which struck fire, when opposed to a flint, was substituted in its room, and the musket or fire-lock assumed its present form during the period of the Commonwealth.

The pistol, or short demi-hagge, so called from its being principally manufactured at Pistoria, in Tuscany, was invented in the middle of the sixteenth century.

FIRE-engines. The Roman syphon noticed by Pliny, is by many conjectured to have been used for the purpose of extinguishing accidental fires, and this idea is strengthened from the circumstance of Apollodorus, the celebrated architect, describing a method of extinguishing a fire in a high building, when the machine called a sypho was not at hand. Isidorus also, who lived in the beginning of the seventh century, mentions fire-engines, under the appellation of syphons, as being then common at Constantinople, but the description and account of them is altogether very confused and unsatisfactory.

The modern kind of fire-engine is first noticed as having been used in the city of Augsburg, in 1518, under the denomination of the *water syringe*. In 1699, a patent was granted in Paris, to Duperrier, for his construction of a machine called the *Pompe Portative*, for the extinguishing of fires, but these engines were imperfect till the invention of the air-chamber, suggested by Perrault, in 1684, and carried into effect by Leopold, a German, about the commencement of the last century. The leathern hose applied to the engine which can be lengthened or shortened as necessary, and to which the fire pipe is applied, was added by Heide, a Dutchman, in 1672, and in the course of a few years became common in the Netherlands. *Hooks and fire-ladders* were introduced about the same period.

The introduction of the fire-engine into England may be probably stated about the year 1650; those of the present construction were common in the middle of the last century; *fire-cocks* were directed to be laid down in the public streets, in 1710.

About forty years ago Daniel Maseres invented a machine, called a *fire-escape*, which being fastened to the window, would enable any one to descend into the street in safety.

FIRE-works. The origin of this amusing branch of pyrotechny is involved in considerable obscurity; the Chinese are supposed to have been acquainted with the use of gunpowder long before it was known in Europe, and to have attained, at an early period, to a degree of perfection in the manufacturing of fire-works, which none of the European artists have been able to equal.

Fire-works are said to have been first used in Europe, on the occasion of public rejoicings, by the Florentines, and are mentioned as being applied to this purpose in England, at the marriage of Henry VIII. with Anne Bullen; they are however but little noticed in the reign of Elizabeth, though they were common under her successor.

FISHERY. The Norwegians appear to have been the first people who established a regular system of fishery, for we read that at a very early period, they had formed a society for the prosecution of the *whale* fishery, which, from the oil it afforded, was an object of great national importance to the people of that climate. Our King Alfred procured considerable information from some Norwegians who had visited this country, relative to this fishery, which he was desirous of recommending to his subjects: what attempts were made in his time to establish this fishery is unknown, as no further mention of it occurs in our history till the close of the sixteenth century. (*See Whale.*)

The *cod* fishery on the extensive banks at Newfoundland, is stated to have been discovered by the Biscayans, in the pursuit after whales on that coast, at least a century before the arrival of Columbus; and it is by many affirmed that it was owing to the information of a Biscayan Newfoundlander, that this celebrated navigator received the first intimation of the great continent of America.

The origin of the British *cod* fishery is thus noticed by Anderson:—"In the year 1536 King Henry VIII. gave encouragement to certain merchants to send out two ships on discovery to the north coasts of America, where they visited Cape Breton and Newfoundland; and being in great distress for want of provisions there, they returned home in October, the same year; and although this voyage proved unfavourable to the principal design of finding a north-west passage to India, yet it gave rise to the very beneficial fishery of the English on the banks of Newfoundland; on which barren island one Mr. Hoare, of London, merchant, attempted a settlement at this time, though he met with much misfortune in that unsuccessful attempt."

It is generally supposed that the Hollanders were the first who commenced upon the *herring* fishery, which they formed into a regular system about the middle of the twelfth century,

when they had become acquainted with the several stations or places on the coast where that fish was to be found, at the different seasons of the year. (*See Herring.*)

FISHING. The art of taking fish by the *line* or *net* is of great antiquity: we find the *hook* and *spear* mentioned for this purpose in the forty-first chapter of Job: fishing-lines made of *horse-hair* are noticed by Aristotle. The ancient Britons were averse to fish; and it is said that Wilfred, Bishop of York, who converted the South Saxons to Christianity, A. D. 686, first instructed them in the method of procuring fish from the sea. During the middle ages the cormorant was domesticated for the purpose of procuring fish.

A method of fattening fish, and rendering them more delicate for the table by depriving them of their strength, was first practised by Tall about forty years ago, though his object at that time was only to prevent their excessive increase in his ponds.

FLASK. This word is derived from the Greek, *Phlaskeion*, which, according to Snidas, was a vessel woven of twigs, and originally procured from Syracuse. The thin glass bottle wrapped round with rushes or straw, similar to the present Italian oil-flasks, were common in Germany in the commencement of the sixteenth century.

ELEECY HOSIERY. This kind of manufacture being an intermixture of fine fleeces of wool with cotton, first made its appearance about forty years ago.

FLOWERS. Garden flowers were in considerable request among the ancients, being required at their public entertainments for decorating their tables, and to give an agreeable perfume to the apartments; they were also used for the adorning of their persons, and to scatter over the tombs of

those who died in the spring of life : but it does not appear that the ancients cultivated the plants of foreign countries till about the year 70 B. C., when Lucullus, the Consul, introduced into Rome various kinds of flowers and plants from Greece, Asia, and Africa.

The greater part of the productions of our flower-gardens were procured from the east in the sixteenth century, when a taste for horticulture was introduced on the continent ; and some German and French gardeners commenced a trade in flowers, from whom the botanists of that time procured many rarities. The tube-rose was brought from Ceylon and Java ; the auricula from Switzerland ; the common fritillary or chequered lily from France and Italy ; the fritillaria imperialis or crown imperial from Persia ; the marygolds and the amaryllis formosissima from South America ; the amaryllis sarniensis from Japan, but having been first discovered on the coast of Guernsey, (in consequence of a vessel having a number of its bulbs being there wrecked, and which bulbs took root in the sands,) it was called by Ray the *Guernsey lily* : the ranunculus and crocus from the Levant, during the period of the crusades ; the jessamine from India ; the tulip from Cappadocia ; the daffodil, gilly flower, carnation, and pink, from Italy ; damask and musk roses from Damascus, &c.

Botanists have been long desirous of discovering some mode of preserving flowers, so that their colours should not fade : sand was first made use of for this purpose in 1633.

Artificial flowers were used by the Italian nuns in the sixteenth century.

FONT. In addition to what has been said respecting the antiquity of fonts, under the head Baptism, we may observe that in the time of the venerable Bede they were called lavacra. And in the history of Sherbourne monastery a contention is noticed between the monks and the parishioners, in which the former complain, that though a font had been

established from the foundation of the monastery (about the commencement of the eighth century) in the nave of the conventual church, the inhabitants had set up another in that part of the church where divine service was performed. These fonts were originally formed of stone, because, as Durandus observes, the water which issued out of the rock was a type of baptism; some were however made of lead, and one of brass, in which the children of the Kings of Scotland used to be baptized, was presented to the monastery of St. Alban's by Richard Lee, being a part of the spoils he had acquired in that country: at the bottom of the font was a pipe for letting off the consecrated water after the ceremony was over, lest it should be applied to superstitious purposes. The republican Parliament considering these ancient fonts as relics of Popery, ordered their removal, and that basons should be used in their stead; and though many of the fonts were afterwards restored, yet in most of our modern churches and chapels, the vessel used for christening consists of a small marble bowl, placed on a slender column or stand of the same material.

FOOLS, Clowns or Buffoons, who were generally people of ready wit, are noticed as forming a part of the establishment of the Roman Emperors, and were common at the court and in the castles of the Nobility of this country, from the period of the Saxon Government, till the middle of the seventeenth century.

FORGERY. The first person who suffered death for this crime was Richard Cowper, in June 1731. Robert and Daniel Pereau, twins, were also executed for it in January 1775, and the celebrated Dr. Dodd on the 29th January 1777.

The facility of committing the offence, and its injurious effects in a commercial country, seemed for a long time to render it imperative on the part of government to enforce the full penalty of the law; and it is reported the first

person to whom mercy was extended, was at the intercession of a dissenting minister, whom his late Majesty, for some reason, had promised to serve, and who now claimed the fulfilment of that promise, in behalf of an unfortunate man who had been convicted of forgery at the York Assizes, in 1803.

The first trial for forging a Bank of England note occurred at Stafford, in April 1758.

FORKS. Neither the Greeks or Romans have any name for these instruments, it being customary with them to have all their articles of food cut into small morsels before they were served up, besides which it was dressed in such a manner as to be exceedingly tender, and easily divided by spoons. The fork, which takes its name from the Italian *forca*, is therefore a modern invention, and is said to have been used at Constantinople, in the eleventh century. A pair of knives in sheaths of enamelled silver, and a fork of crystal, are mentioned in the wardrobe accounts of Edward I., which probably had been brought from Constantinople, during the period of the Crusades. Voltaire, in his *General History*, says that forks were used by the Lombards in the fourteenth century, and Galeatus Martius states they were common in Italy, at the end of the fifteenth century, though another century elapsed before they are noticed in France; soon after which, in 1610, Thomas Coryate, an Englishman, who had travelled into Italy, introduced them into this country, and the method of using them is thus noticed, in the book he published of his travels, which he entitled his "*Cradities*:"—"The Italians, and also most strangers that are commorant in Italy, do alwaies at their meads use a little forke when they cut their meate, for while with their knife, which they hold in one hand, they cut the meate out of the dish, they fasten their forke, which they hold in their other hand, upon the same dish, so that whatsoever he be, that sitting in the com-

pany of any others at meale, should unadvisedly touch the dish of meate with his fingers, from which all at the table doe cut, he will give occasion of offence unto the company, as having transgressed the lawes of good manners, insomuch that for his error, he shall be at least brow-beaten, if not reprehended in wordes; hereupon, I myself thought good to imitate this Italian fashion, often times in England, since I came home, and was once quipped for that frequent using of my forke, by my friend Mr. Thomas Whitaker, who, in his merry humour, doubted not to call me at table *furcifer*, only for using a forke at table."

FORTIFICATION. The progress of fortification, founded first on necessity, has been, like that of other important and useful arts, gradual. Instruments of defence are made necessary by those of offence; trunks of trees interlaced with branches, and supported with earth, were probably the first attempts of artificial security; this was succeeded by a wall furnished with a parapet for shooting, in safety, arrows at the enemy, but as a parapet covers but half the body, the walls were increased in height, and loop-holes made in it, through which the missiles could be discharged; the besiegers now, in order to effect an entrance, were under the necessity of making a breach in the wall; they therefore invented the battering-ram, which was first used by Pericles, the Athenian, and perfected by the Carthaginians at the siege of Gades; to oppose that formidable machine, projecting towers were made to flank the walls; the besiegers next had recourse to a large wooden house or booth sometimes made higher than the walls of the city, upon the upper stories of which were the archers, while underneath the battering-ram was put into motion by the soldiers; but this machine was rendered ineffectual by surrounding the wall with a deep and broad ditch, which reduced the besiegers to the necessity of throwing stones and darts from a distance, by means of their catapults

and ballista, and until the introduction of gunpowder the advantage was considerably in favour of the besieged. To resist however the dreadful effects of cannon, a considerable alteration in fortification was requisite, bastions, crown-works, half-moons, and horn-works were crowded one upon another, and military architecture was reduced to a regular science, governed by general and fundamental rules.

FRESCO. This method of painting on plaister was practised in the earliest ages of Greece and Rome; the Italians called it *Fresco* on account of its being used for walls and parts of buildings exposed to the open air.

FULLING. Pliny informs us, that the art of scouring cloths and woollen stuffs was invented by Nicras, the son of Hermias, who, according to Sir George Wheeler, was a Governor of Megæra, under Augustus. The Romans, having divested the cloth of grease, by means of lye, urine, and fuller's earth, which they procured from Sardinia, afterwards washed it in a vat in which the struphium and other saponaceous plants had been boiled, and then fumigated it with sulphur for the purpose of bleaching.

FUNDS. According to an official account made by the Bank of England, in 1824, the number of persons holding public property, or in other words, creditors of England, were 288,000; of these the number who received half-yearly dividends, were as follows: of £5, 9,600; under £10, 41,000; between £10 and £50, 96,000; between £50 and £500, 33,000; between £500 and £2,000, 22,000; and above £2,000, 213.

The *sinking-fund* was established at the recommendation of the Earl of Stanhope, in 1716, and was first broken in upon by Sir Robert Walpole, in 1733, who remarked that the circumstances of the nation had altered so much since the

establishment of the sinking-fund, that the competition among the public creditors was not now who should be the first, but who should be the last to be paid.

FUR. Skins of beasts with the hair on were probably the first kind of dress worn by the inhabitants of cold climates : but at what period furs became an article of luxury, cannot be ascertained ; for they are not noticed as constituting any part of the dress worn by the patrician orders in the enlightened nations of Greece and Rome, being probably at first confined to the northern parts of Asia and Europe. The Romans first acquired a partiality for them in their intercourse with the Germans, who being well acquainted with the art of dressing them, and wearing them in a graceful manner, rendered dresses of fur so fashionable among the young Romans, that Honorius, in 397, prohibited the use of them, considering that the rage for adopting the German customs was a melancholy presage that the dominion of the Goths would ultimately prevail.

It seems probable that the Saxons introduced the use of furs into Britain, though they became more general under the Normans, especially during the period of the crusades ; for when Richard I. and Philip II. of France embarked for the Holy Land, in order to discourage extravagance, they mutually resolved not to wear either ermine, sable, or any other costly fur.

Previously to the discovery of the New World by Columbus, the furs in general demand for Europe were procured from Russia and Siberia. The British fur trade with America commenced in 1540.

GALVANISM. The discovery of this interesting branch of science, formerly called Animal Electricity, is first noticed in the "General Theory of Pleasures," published by Sultzer, in 1750, wherein he states, that if a piece of zinc is placed, the one in contact with the upper, and the other with the under surface of the tongue, and their projecting edges brought together, a taste will be produced resembling vitriol of iron, which sensation he ascribes to a vibration of the particles of the metals affecting the nerves of the tongue; but the discovery not meeting with the public support was soon forgotten, and this new system of electricity is now generally attributed to Lewis Galvani, Professor of Anatomy, at Bologna. It appears that the wife of Galvani being in a bad state of health, was recommended a soup made from frogs as a restorative, and some of these animals skinned for the purpose, happening to lie on a table in Galvani's laboratory, on which was placed an electrical machine, one of his assistants in his experiments, by accident, brought the point of a scalpel near the cranial nerves of a frog lying near the conductor, when the muscles of the animal became immediately strongly convulsed: a repetition of the experiment being attended with similar effects, led to a regular investigation of the cause, an account of which was published by Galvani, in 1791, and entitled, "Aloyfii Galvani de viribus electricitatis in motu musculari commentarius." This work attracted the attention of the Philosophers, both on the conti-

ment and in this country ; none, however, added any thing new to what Galvani had discovered, till about the year 1800, when *Signor Volta*, of Pavia, communicated his important discovery of accumulating the effects of this species of electricity by means of his *battery or pile*, which consisted of a certain number of pairs of zinc and silver plates separated from each other by pieces of wet cloth, and this *Voltaic pile* has been since considerably improved upon by *Cruikshank* and others.

GAME. At the time of the Romans this island is represented as abounding with all sorts of game, which was the common property of the inhabitants ; but as the system of agriculture introduced by the Romans, became in progress of time to be generally adopted, the beasts were driven into desert tracts called forests, which, under the Saxon Government, were reserved for the sole diversion of its princes, while the husbandmen or freeholders were only permitted to sport on their own soil, as is expressed in the laws of Canute and Edward the Confessor. The Norman princes, however, who were desirous that such of the natives as were not military tenants, should be prohibited the use of arms, forbade the diversion of hunting and sporting, except to the principal feudatories or Barons, and in 1209 John issued a proclamation against the taking of all sorts of *feathered game*, which is said to have been the first edict of the kind ever made ; and thus the law stood till 1390, when Richard II. established certain qualifications, entitling those who possessed them, to the privilege of keeping dogs, nets and hawks for the purposes of sporting.

GARDENING. The art of forming and cultivating flower gardens and pleasure grounds is of great antiquity, and must have been brought to considerable perfection in the time of Nebuchadnezzar, who about 600 B. C., with a view of grati-

fyng his wife Amyatis, constructed the raised or hanging gardens from the walls of Babylon, upon which trees, plants and flowers were introduced, and aqueducts for the purposes of irrigation. The employment of gardening was considered by the Greeks and Romans, to be worthy their greatest heroes and philosophers; and Plato and Democritus, Cato, Cicero and Dioclesian, are celebrated for the beauty and magnificence of their gardens, which are described as planted with various odoriferous flowers and shrubs, and embellished with a variety of statues and aqueducts.

Previous to the commencement of the sixteenth century, most of our vegetables and fruit were procured from the Netherlands, but at this period a taste for horticulture and botanical researches sprung up in Italy and Germany, and soon extended into this country, and the seeds of various kinds of fruit and flowers, as also of different sorts of vegetables, having been procured from Flanders, were first cultivated in this country on scientific principles.

The introduction of different plants and fruits from America, about the close of the sixteenth century, rendered the erection of *hot-houses* necessary, it being hoped that the oranges and pine apples might be brought to perfection in that artificial climate. About this time also *forcing-beds*, made of tanner's bark, were introduced into the system of gardening by the Dutch, though they are first mentioned as being used in England in 1688, when some forcing-beds were made at Blackheath, in Kent, for rearing orange trees:

GARTER. The Order of the Garter (which is under the patronage or protection of St. George of Cappadocia, the tutelar saint of this kingdom) was instituted, according to Papebroche, in his *Acta Sanctorum*, by Richard Cœur de Lion, who, accompanied only by six-and-twenty knights, was surrounded by a large party of Saracens near Acre, and but for this faithful and valiant band, would have fallen into their

hands. To commemorate this exploit, the king directed that these knights should be distinguished by a thong of blue leather below their knee, which he himself also condescended to wear, and afterwards this body received the appellation of the Knights of the Blue Thong. Rustel, who notices the above account of its origin in his Chronicle, states that Edward III., in the nineteenth year of his reign, 1344, "made a solemn feast at Windsor, and a great just and tournament, when he devysed and perfected substancyally the Order of the Knights of the Garter," which, according to common opinion (though considered fabulous by our best antiquaries) originated from the circumstance of the garter of Joan, Countess of Salisbury, having dropped while dancing, and being presented to her by the king, with the observation of "*Honi soit qui mal y pense*," which was afterwards adopted as the motto.

This Order was known under the title of the Order of St. George till the time of Edward VI., who changed it to that of the Garter, and made several alterations in the ritual of it, which are still extant in his own hand-writing: it is considered the most ancient and noble lay order in the world, being prior to the French Order of St. Michael by fifty years; to that of the Golden Fleece by eighty years; to that of St. Andrew by one hundred and ninety years; and to that of the Elephant by two hundred and nine years.

The college of the Order is held at the castle of Windsor, within the chapel of St. George, the Bishop of Winchester being its prelate; the Bishop of Salisbury its chancellor; and the Dean of Windsor its register.

The *mantle* originally was of fine woollen cloth, of a blue colour, which was changed to purple by Elizabeth, but restored to its original colour by Charles I. Mantles made of velvet, occur about the beginning of the reign of Henry VI.

The *surcoat* or kirtle was also made of woollen cloth, till Edward IV. changed it to crimson velvet.

The hood, also of blue cloth, was formerly worn on the head, but it is now attached to the mantle, and instead of it, a black velvet cap, adorned with a plume of ostrich feathers, was introduced about the time of Henry VIII. ; though the custom of wearing it was not fully established till the tenth year of James I. : the George and Collar was also added by Henry VIII., and the Star by Charles II.

In the cathedral church at Hereford is the figure of Sir Richard Pembridge, having the Garter over his armour, which is the earliest instance of its being so worn.

GARTERS. The Anglo-Saxons wore their garters, crossing up the leg in the same manner as the Highlanders of the present day.

GAS-LIGHTS. The word "gas," which in German signifies a ghost or spirit, was first applied by the celebrated chemist John Von Helmont, about the commencement of the seventeenth century, to signify those elastic fluids which are invisible, and not condensable by cold : but it is to the discoveries of Priestley and Lavoisier that we are indebted for its being applied to useful purposes. The inflammability of the gas produced from the distillation of pit-coal has long been a fact familiar to chemists, and is noticed in the Philosophical Transactions of the year 1667 ; and in 1733 there is an account of the carborated hydrogen issuing from a coal-work in Cumberland, having been collected in a bladder, and made use of for the purpose of illumination, the gas being ignited at the extremity of a small tube attached to the bladder. The Rev. J. Clayton, in 1739, appears to have been the first who endeavoured, by chemical means, to procure the gas necessary for this purpose : he acquaints us, that having distilled coal in a close retort, he obtained therefrom a black oil and a permanent gas or spirit, which he confined in bladders, and burnt through small orifices. It is therefore singular that

this discovery should not have been applied to any purpose of public utility till 1792, when Mr. William Murdock, of Soho, first made use of coal-gas for lighting his house and offices at Badminton in Cornwall, and in 1798 applied it for the lighting part of the very extensive manufactory of Messrs. Boulton, Watt, and Co., at Soho, near Birmingham. The illumination of the Soho works by gas in 1802, at the time of the peace, seems to have brought it into general notice, and it was soon afterwards adopted in many places by different individuals, who, proceeding from their own ideas, introduced various modes of collecting and purifying it. In 1804 Mr. Winsor took out a patent for purifying coal-gas; but the first public exhibition of it in London was near Caulton-house, on the fourth of June, 1806, in which year a company was established for the purpose of conveying the gas by pipes along the streets of London, so that they, as well as the houses, might be regularly supplied with it.

Gas, extracted from wood, was used in Paris in 1804; and from oil, by Dr. Henry, in 1805.

GAUZE, in the middle ages, was called *gauzotum*, from Gaze in Palestine, supposed to be similar to the celebrated *coarctua* mentioned by Isaiah, as worn by the Oriental women. The Chinese have long been famous for their rich gauzes, embroidered with flowers of gold. A manufactory of gauze was first established at Paisley in 1759.

GAZETTE. It is related that the first news-pamphlet published at Venice was called *Gazetta*, from a kind of coin there current of that name, which was the ordinary price paid for it; the period of the publication of this paper is however unknown, the earliest *Gazetta* noticed being the one published at Paris in 1661, by Théophrast. Renaudin, in his office of "Court newsmonger."

The first Gazette published in this country was the Oxford

one, dated the seventh of November, 1665, where the court then was, and is printed in a folio half-sheet. On the removal of the Court to London the title was changed to the "London Gazette," first published on the fifth of February, 1666. The Oxford Gazette was published on Tuesdays, and the London Gazette on Saturdays, and this continued till June, 1826, when the London Gazette was ordered to be published for the future on a Friday.

The London Gazette being published under the directions of Government, all notices and proclamations in it are considered as official; upon which account, in November, 1787, a Gazette was ingeniously forged to answer a stock-jobbing purpose.

GENERAL. This rank in the army is first noticed under Henry VIII.; the Commander-in-Chief being styled the Captain-General, and the next in dignity the Lieutenant-General.

GENTLEMAN. Chamberlyne observes that a Gentleman is one whose ancestors have been freemen, and owed obedience to none but their prince; and Cambden that a Gentleman of Blood is one who bears arms from his grandfather. We read that J. Kingston was made a Gentleman by Richard II. in 1430: the addition of Knight is very ancient; but that of Esquire or Gentleman was seldom used before the reign of Henry IV.

GEOGRAPHY. The Chaldeans and Egyptians, who were early distinguished for their knowledge of geometry and astronomy, were naturally led to pay particular attention to geography; and Moses, who was well skilled in all their learning, has given us the most ancient geographical description of a country in his account of Arabia and Egypt, written 1450 B. C. Neco, King of Egypt, ordered a survey to be taken

of the whole coast of Africa ; and Darius of the Ethiopian sea and the mouths of the Indus. Diognates and Baton were directed by Alexander to measure and describe the countries through which his army marched : and Artemidorus, of Ephesus, published a description of the earth in eleven books, which is often referred to by Pliny and Strabo ; and several other Greek writers might be mentioned who distinguished themselves by the cultivation and improvement of this science.

Geography was transmitted with the other arts from Greece to Rome. Polybius, under a commission from Scipio *Æmilianus*, reconnoitred the coasts of Africa, Spain, and France, and measured the distances of all those places which Hannibal had visited in his march over the Pyrenees and Alps. Varro's works comprehend a great deal of geographical information. Zenodorus, Theodorus, and Polyclethus, were employed under the consulship of Julius Cæsar and Mark Antony, in surveying and measuring the Roman empire. The commentaries of Cæsar, which contain a geographical description of the countries he conquered, and of the manners and customs of their respective inhabitants, are still perused with pleasure. Augustus was also a distinguished patron and promoter of this science : under him Strabo flourished. Pliny has given us an account of the world, as then known in the fourth, fifth, and sixth books of his *Natural History*. Under the Emperor Theodosius, the provincial and itinerary chart or table, called the *pentenger*, was digested and formed ; and the last work which may be classed with those of the ancients, was the *Notitia Imperii* of *Ethicus*, published about the year 450.

The æra of barbarism succeeded the fall of the Roman empire ; and during the middle ages, geography, like most of the other sciences, rather retrograded than advanced, till about the close of the fourteenth century, when the doubling of the Cape of Good Hope by the Portuguese seemed at once to revive the spirit of geographical enquiries ; and voyages of discovery, though principally for the purposes of gain,

were undertaken by the different naval powers of Europe : the result was the establishment of an extensive commercial intercourse with the inhabitants of India and China, a people of whom we had no knowledge, except from some obscure communications of Megasthenes, the ambassador of Alexander at the Indian court of Palibothra. The discovery of America by Columbus, and the settlements of the Spaniards and British in that new quarter of the globe,—of the extensive island of New Holland,—added to the civilization of Russia, the establishment of various colonies, and the circumnavigation of the globe by enterprising and skilful commanders, have now so greatly increased our geographical knowledge as to make that of the ancients appear trifling and insignificant.

GEOMETRY. The origin of this science is attributed by Josephus to the Hebrews ; but Herodotus, Diodorus, and Strabo, maintain that the Egyptians were the inventors of it ; for the annual inundations of the Nile bearing away all the bounds and land-marks of men's estates, it became necessary for the owners to have recourse to some method of distinguishing their property, when the waters had subsided, by the consideration of their figure and quantity, and thus the foundation of geometry was established ; and was introduced into Greece by Thales, where it was considerably improved upon by Plato and Euclid, about 500 B. C. : these philosophers were succeeded by several illustrious geometrists, and even after the Greeks were subdued by the Romans, they continued to cultivate this favourite study. The Romans, on the contrary, were so little acquainted with this science, even in the most flourishing period of their republic, that they gave the name of Mathematician, as Tacitus informs us, to those who pursued the chimeras of divination and judicial astrology ; and we find that after the revival of letters, there was scarcely one European capable of appreciating or understanding the works of the ancient geometers,

till Descartes, published his treatise on the subject, in 1687; he was soon followed by a number of celebrated writers, among whom Sir Isaac Newton stands pre-eminently distinguished for his valuable work, entitled "*Philosophia Naturalis Principia Mathematica*," published in 1687, which has advanced the science of geometry far beyond the boasted acquirements of the ancients.

GILDING. Herodotus informs us that the Egyptians were acquainted with the art of gilding wood and metals, and we read that Moses caused several parts of the Sanctuary to be overlaid with gold; Homer also describes the bull sacrificed by Nestor to Minerva, as having its horns first covered over with ductile gold.

He said, and busy each his care bestow'd,
Already at the gates the bullock low'd;
Already come the Ithacæan crew,
The dexterous smith the tools already drew;
His ponderous hammer and his anvil sound,
And his strong tongs to turn the metal round;
With reverend hand the king presents the gold,
Which round the intorted horns the gilder roll'd,
So wrought as Pallas might with joy behold.

Odyssey. Lib. III.

The Carthaginians are stated to have been the first people who decorated the walls of their houses with plates of gold, and on the destruction of their city this species of extravagance was introduced into Rome. Pliny states that the Capitol was the first building upon which this enrichment was bestowed, but he adds that in a little time it became common even in the houses of private people: at first the gold was beat into plates, and fastened by nails to the walls, but afterwards a method was discovered of making the plates thinner, and the expence was consequently considerably lessened. Pliny says, the Romans made from seven to eight hundred

leaves, four fingers square, from one ounce of gold, which caused Seneca to exclaim, that the Romans in covering their houses with gold delighted in deceit, as they knew that wood was concealed under it; these thin leaves of gold were attached to marble with a kind of varnish, and to wood with a cement called leucopheron, the composition of which is unknown to our antiquaries. The Romans were also acquainted with the art of fixing the gold to metals by means of quicksilver, with the assistance of heat.

The method of artificial gilding, by covering metal with a varnish of a gold colour, is noticed by Theophilus, a German Monk, who lived in the twelfth century, and was revived by Evelyn, an Englishman, in 1633, but it seems to be doubtful whether the ancients were acquainted with it. The art of gilding in oil, which, though not so brilliant as the burnished gilding, is valuable from its not being injured by exposure to the atmosphere, is also a modern discovery. The *dry* or *cold* gilding used in the ornamenting of fans and toys, was invented by the Germans. The gilding of paper has been practised in China from a very remote period.

It is not known what means the Romans adopted for beating their gold to the requisite fineness for gilding. Theophilus states that in his time it was beaten between parchment previously covered over with burnt ochre reduced to a fine powder, but during the progress of the art the parchment being found too thick and hard, the skin of an unborn calf was made use of in its stead, and the gold leaves were made much thinner than had ever before been possible; but the art was brought to still greater perfection, about the commencement of the last century, by the German introduction of the fine pellicle detached from the gut of an ox, which was used by them instead of vellum for this purpose; and by means of which Reaumur found that an ounce of gold could be so extended by the gold-beaters, as to cover a surface of more than one hundred and forty-six square feet.

GLASS. This word is supposed to be derived from the German *glessum*, the name for amber, which it was thought to resemble in its transparency and brightness ; some imagine glass to have been invented before the flood, and that Moses alluded to the sands that glass was made of, when he said to Zebulon—"They shall suck of the abundance of the seas, and of treasures hid in the sand ;" for in the inheritance of that tribe, or very near the frontier of it, ran the little river Belus, where a particular kind of sand was to be found, of great use in the manufacture of glass ; which Pliny corroborates by informing us, that glass was first accidentally discovered in Syria, at the mouth of the river Belus, by certain merchants driven thither by the fortune of the sea, who being obliged to live there and dress their victuals by making a fire on the ground, collected some of the plant kali, of which there was abundance on the spot, for that purpose : this herb being burnt to ashes occasioned a vitrification of the sand and stones that adhered to it, thus producing glass, and affording a hint for the fabrication of it.

The period when this discovery was made is involved in considerable obscurity, for it seems to be the general opinion that what has been denominated glass, in the Old Testament as well as in some of the translations from ancient Greek authors, ought rather to have been termed crystal, however our knowledge of this invention is principally derived from the Romans ; though Theophrastus who lived about 300 B. C., has given us some account of glass, which he also describes as being made of the sand of the river Belus.

The first glass-houses were erected at Sidon near the mouth of the Belus ; but the glass-houses of Alexandria were most celebrated among the ancients for the skill and ingenuity of the workmen employed in them, and from these the Romans for a long time procured all their glass ware.

Lucretius, who wrote about 60 B. C., is the earliest among the Latins who makes any mention of glass, which appears

to have been brought into use at Rome in the time of Augustus, and if the following anecdote be true, the manufacture of it, under his successor was carried to a far greater degree of perfection than the moderns are capable of.

It is related, that in the time of Tiberius, an artificer in Rome made a glass vessel of so tenacious a temper, that it was as difficult to break as if it had been made of metal; and which being thrown with great violence on the ground in the presence of the Emperor, was not broken, but bruised, and was immediately beaten into its former shape, by an instrument which the artificer had ready for that purpose. The Emperor, who appeared to have been rather more alarmed than pleased with the experiment, enquired of the inventor if any other person besides himself was privy to this method of tempering of glass and rendering it malleable, and being answered in the negative, he ordered the unfortunate artificer to be put to death, saying that if the art should become generally known, gold and silver would be of as little value as dirt.

Pliny observes that in his time glass was made with the sand found at the mouth of the river Volturnus, between Cumæ and the Lucrine Bay; this sand was very fine, and being mixed with three parts of the fossil alkali and fused, was conveyed in a liquid state into other furnaces, where it was formed into a mass called ammonitrum, which being again melted became pure glass, and was brought to the shape required by blowing with the breath, though some pieces were ground on a lathe, and others embossed in the same manner as gold and silver; he further notices, that no substance was more manageable in receiving colours, or being formed into shape than glass. And it appears from Martial, that glass was not only in common use, for drinking vessels, but was likewise formed into bottles in which wine was kept; and a regular company of glass-manufacturers was soon afterwards established near the Porta Capena, at

Rome, but the Romans in general preferred silver and gold to glass for the composition of their drinking vessels.

Some square panes of a *glazed window* were discovered at Herculaneum, which proves that the Romans made use of glass, as well as of the lapis specularis and phengitas, noticed by Seneca, for the admission of light into their rooms.

It is presumed that the *manganese* was made use of to purify glass in the time of Pliny, as he more than once remarks that the magnet was employed in glass; and under this name the ancients comprehended manganese, though the term itself was first used by Albertus Magnus.

The art of manufacturing glass into such ornaments as beads and amulets, was known to the ancient Britons long before the arrival of the Romans; they also, according to Strabo, made vessels of glass which were generally of a blue green cast, but as no notice is taken of this manufacture during the period of the Roman government, it was probably one of those arts which, being only known to the Druids, was lost on the extermination of that people by Suetonius Paulinus.

The Venerable Bede informs us, that the Abbot Benedict, about the year 674, first brought from Italy artificers skilled in making of glass, for the purpose of glazing the church and monastery at Weremouth; and as St. Jerome, who wrote early in the fifth century, and Gregory of Tours in the sixth century, make mention of windows formed of glass melted and cast into thin plates, being used in their time, it would seem that this was one of the few arts, which, from its great utility, was able to withstand the shock of Gothic devastation; yet glass windows were but rarely used on the Continent even in the twelfth century. Among Maddox's Collections of the 49th Henry III., is an abstract of a roll marked Woodstock, evincing that so long ago as 1265, glass windows were used in his palace at that place, as also at Westminster; and that Chaucer's chamber windows were glazed, we gather from his *Dreame*.

My windows wherein shet echone,
 And through the glasse the sunne yshone,
 Upon my bed with bright bemis,
 With many glad gildy stremis.

l, 333.

In a charter of Richard II., 1386, mention is made of glass together with the manufacture of it for windows. The glass for Warwick Chapel, in the time of Hen. VI., was procured from abroad at two shillings a foot; and it seems to be the general opinion, that most of the windows in this country were made of lattice, and not of glass, till the commencement of the sixteenth century. William Harrison, who wrote in 1577, observes, "that of old time, our countrey houses instead of glasse did use much lattice, and that made either of wicker or fine rifts of oke in checkerwise; I read also that some of the better sort, in and before the times of the Saxons, did make panels of horne instead of glass, and fix them in wood calmes, but as horne in windows is *now* quite laid down in every place, so our lattices are also growne into lesse use, because glasse is nearly as cheape if not better than the other." But glass windows were not introduced into the better sort of farm-houses in the country, till the commencement of the seventeenth century.

The Venetians, about the commencement of the fourteenth century, became celebrated for their glass manufactories at Mureno; and from that time till the middle of the seventeenth century, they generally supplied the rest of Europe with this article. Our ancestors generally drank out of cups, made either of wood, horn or metal; cups of crystal glass were imported from Venice during the reign of James I., and were placed in recesses as objects of value and curiosity along with the china and plate, in the time of Charles II. A manufacture of glass was first established in London, in 1557, and was considerably improved in 1635, by the adoption of pit or sea coal instead of wood. Soon afterwards a monopoly was

granted to Sir Robert Mansell, to import the fine Venetian flint glasses for drinking, the art of making which was not brought to perfection before the reign of William III. In 1670, the Duke of Buckingham having procured some artists from Venice, introduced the manufacture of fine glass into England with so much success, as in the course of a century, to have surpassed the productions of the Venetians themselves.

The art of *casting* glass in plates was invented by Abraham Thevant, a Frenchman, in 1688, and first practised in this country at Prescott, in Lancashire, in 1773. (*See Mirror.*)

The art of tinging the glass with various colours was known to the ancients, and practised at Alexandria, for we read that cups manufactured at that place, were presented to the Emperor Adrian, which sparkled with colours of every kind, and Strabo says this was effected by a peculiar earth which was only to be met with in Egypt. In some collections of antiquities at Rome, are pieces of glass so perfectly coloured and transparent throughout, that they were frequently taken for jewels. What materials the ancients used for colouring glass is unknown, but it is certain that metallic calces must have been employed, as these pigments alone are capable of withstanding the heat of the glass furnaces.

The process of tinging glass and enamels, by preparations of gold, is first detailed by Neri, in his *Art of Making Glass*, published in 1611, which was improved upon by the gold calx or precipitate invented by Kunkel, who about the year 1680, made a cup of ruby glass for the Elector of Cologne, weighing not less than twenty-four pounds, a full inch in thickness, and of an equally beautiful colour throughout. Drinking glasses with gilt edges, were first manufactured at Bohemia and other places in Germany.

Painting on glass and in enamel may in certain respects be considered as branches of the art of colouring glass : originally it consisted in the arrangement of pieces of glass of different colours, in some sort of symmetry, constituting a

kind of Mosaic work ; afterwards when an attempt was made to represent figures, and to delineate the different shades of their draperies, the figures were drawn in black, with water colours, and the draperies attached to it by separate glasses of the colour required. About the year 1500, a French painter at Marseilles, discovered a method of incorporating the coloured drawings themselves on the glass, by exposing it to a proper degree of heat after the colours had been laid on, and this invention was considerably improved upon by Albert Durer, and Lucas of Leyden.

This art is supposed to have been introduced into England in the reign of John, and was at first exercised by ordinary tradesmen, from plans drawn by artists ; Walpole produces instances of it in the reign of Henry III., and he traces the history of it from the Reformation, (when misguided zeal destroyed most of the monuments of it in our churches,) through a series of professors to the present time.

The art of cutting or engraving on glass by means of the lapidary's wheel is noticed by Pliny, and was revived by Caspar Lehmann in the beginning of the seventeenth century. The diamond is first mentioned as being applied to this purpose by Francis I. of France ; soon after which, festoons and other ornaments cut with a diamond became extremely common on the Venetian glasses. Previous to this discovery, emery and sharp-pointed instruments of hard steel, and sometimes a red-hot iron, were used by the glaziers for the purpose of dividing the glass.

For the method of engraving on glass by *means of acids*, see *Engraving*.

A method of forming glass to resemble *porcelain*, by reducing it to a less vitrified state, was invented by Reaumur about 1740.

The property which glass possesses, in common with other substances, of being extended by heat and contracted by cold, was communicated by Hooke to the Royal Society in 1660.

Musical glasses are of German origin, and were introduced into England in 1760.

GLEANING was the common privilege of the poor Egyptians and Israelites; and it is ordained by the law of Moses, that "When ye reap of the harvest of your land thou shalt not make clean riddance of the corners of the field, neither shalt thou gather any gleanings of thy harvest: thou shalt leave them to the poor and to the stranger."

GLEE. This word, signifying joy, is first met with in Chaucer: it is not noticed as a technical phrase in music before the middle of the seventeenth century. A collection of songs and *glees* was published by Playford in 1667.

GLOBE. Atlas, King of Mauritania, is stated by Diodorus Siculus to have been the inventor of globes, and he is consequently generally represented as bearing a globe on his shoulders. The ecliptic was added by Anaximander, and the signs by Cleostratus: Parmenides first divided it by zones. Hipparchus invented the celestial globe; and Popidonius, the philosopher, according to Cicero, made a globe on which he represented the course of the sun, moon, and planets. In the museum of the Cardinal Borgia was a celestial globe, made by an Arabian astronomer in 1225.

GLORIA PATRI, or the Doxology, was in use, according to Baronius, in the time of the Apostles, and was first directed to be said or sung at the end of the psalms by Pope Demasius about the year 382. The response, "As it was in the beginning, &c.," was ordered by the fifth Canon of the Council of Vaison, held in the year 529, to refute the heresy of those days in which it was contended that the Son of God had his beginning in time.

GLOVES. The Persians, according to Xenophon, wore thick gloves. Homer, speaking of Laertes at work in his garden, represents him with gloves on his hands, as a guard against thorns. Pliny the younger, in the account of his uncle's journey to Vesuvius, informs us that his secretary wore gloves on his hands, that the coldness of the weather might not prevent him from writing whatever might appear worthy of notice.

About the close of the eighth century Charlemagne granted to the abbots and monks of Sethin an unlimited right of hunting, that they might be enabled to make *gloves* and girdles of the skins of the deer they killed, and covers for their books.

It is generally supposed that our Saxon ancestors introduced the use of gloves from the continent, and that they were unknown in England prior to the commencement of the eleventh century, at which time they were used only by persons of the most exalted rank; for we read that five pair of gloves were presented to Ethelred II. by a society of merchants, to secure his protection for their trade: gloves are also mentioned as a part of the royal habit of Henry II., when his body was laid in state after his decease.

Stowe relates that Edward Vere, Earl of Oxford, having travelled into Italy, was the first who brought into England embroidered gloves and perfumes; and presenting Queen Elizabeth with a pair of them, she was so delighted as to have her portrait drawn with them on.

There is a proverb, that "A glove to be well made, three kingdoms must contribute to it:" Spain to dress the leather, France to cut it, and England to sew it.

In the age of chivalry the challenge was given and accepted by throwing the glove on the ground, which was taken up by the opposite parties on the point of their swords; and this custom is still retained in the coronation of our king.

GOLD. This metal is first noticed in the sacred writings about 1920 B. C., when Abraham, on his return from Egypt, is represented as being "rich in cattle, in silver, and in gold." Gold and silver ornaments were also given to Rebekah by Abraham's servant, on her being betrothed to Isaac; and most of the costly ornaments and utensils for the tabernacle were of gold, brought by the Israelites out of Egypt. Four hundred shekels of silver were given by Abraham for the purchase of a burial place for his wife Sarah; and this metal seems to have been that commonly used by the Israelites as an article of barter: but though gold was equally well known to them, and considerable quantities of it were discovered in Canaan, it never seems to have been applied to this purpose, at least prior to the destruction of Jerusalem by the Babylonians, about 588 B. C.

According to Herodotus, gold and silver were coined by the Lydians about 900 B. C.; the Sicilians coined gold about 491 B. C.; and the Greeks in the time of Philip, the father of Alexander, 350 B. C.; the gold coinage of Rome took place, according to Pliny, about sixty-seven years after silver,—that is, in the five hundred and forty-seventh year of the city, (by vulgar account) or 204 B. C.

After the arrival of the Romans in this island, the Britons imitated coining both gold and silver, with the images of their kings stamped on them; but this coinage was afterwards suppressed by the Romans; and the silver penny or denarius seems to have been the only coin in circulation till about the year 1257, when a gold coin, weighing two denarii, was struck by Henry III., which was followed by the gold florin of Edward III. in 1344.

The comparative value of gold and silver has fluctuated considerably in different ages and in different countries: the earliest account we have of it is given by Herodotus, who states the proportion to have been in Persia in the time of Darius as thirteen to one; other historians state that it was as

twelve to one in Greece in the early period of her history ; but that about the time of Alexander the Great it was only as ten to one, which was also the proportion at Rome, and so continued to the time of Julius Cæsar, when, on account of the quantity of gold brought from conquered countries, it was for a short time in proportion to silver only as seven and a half to one.

In England, from the time of the Saxons to the discovery of America, the relative value of gold and silver was as about eleven to one ; in the time of Elizabeth, thirteen to one ; and is now about fifteen to one.

GOLD FISH came originally from China, where they grew to the size of a herring : they were brought to this country in 1690, and were common about the middle of the last century.

GRACE. The ancients commenced their feasts by pouring out libations to the Gods, and offering them the first fruit of the viands : the Jews were also accustomed to give thanks previous to their meals, and this was continued by the Christians : the dishes of the Anglo-Saxons were sometimes signed with the cross.

GRAMMAR. The first grammar for the use of children was published at Rome by Donatus, the grammarian, about the commencement of the fourth century—hence grammars were formerly called *Donate*.

GREEK. We may distinguish three different ages of the Greek tongue, which, notwithstanding the revolutions to which the country where it is spoken has been subject, has preserved its purity better than any other known language : the first age terminates about the period when Constantinople became the capital of the Roman empire in the east, when a great

variety of new words and phrases, both in the religious, civil, and military departments of the state were introduced; and the second ends soon after the destruction of the city by the Mahometans; for these barbarians considering all books as useless, except the Koran, destroyed such as fell into their hands, and punished those who ventured to preserve them; and thus the language being reduced to a common oral communication, gradually lost its classical purity.

The Greek language was introduced into this country in the thirteenth century, by John de Basinge, or Basingstoke, Archdeacon of Leicester, who was partly educated in the University of Oxford, and partly in that of Paris, from which place he travelled to Athens, and on his return to England brought with him a great number of Greek manuscripts, and translated from the Greek into Latin a grammar, which he entitled "The Donatus of the Greeks:" he died in 1252: but the beauties of the Greek language were not generally appreciated in Europe till some time after the fall of Constantinople, and the study of it was revived in this country by Erasmus in the commencement of the sixteenth century.

GRENADÉ, or Grenado. Thucydides observes that grenades were first used by the military, at the siege of Wachendorch, about the close of the sixteenth century, and that the inventor of them, who was an inhabitant of Venlo, occasioned the destruction of two-thirds of that city by the accidental bursting of one. A company of grenadiers, so called from their making use of hand grenades, which they flung into the enemy's works previous to the assault, was established in France in 1667, and grenadier regiments are still common in France and England, though the use of the grenade has been long exploded.

GRUB-STREET. Pennant says, this street has long been proverbial for the residence of authors of the less fortunate

tribe, and the tribe and illiberal jest of the most favoured, which character it seems to have obtained as far back as during the Protectorate of Cromwell, when the street consisted of low and mean houses, which were let out in lodgings, in many instances, to persons whose occupation was publishing anonymously, what were then deemed libellous or treasonable works.

GUARDS. The remotest antiquity affords instances of a domestic body of guards being established for the protection of the chief person in the state: no doubt therefore they are as ancient as monarchy itself. The Roman emperors had for their guard the prætorian cohorts as established by Augustus.

The corps called the yeomen of the guards, vulgarly beef-eaters (from their being stationed in the King's presence near the beef-eater, or sideboard), was raised by Henry VII. in 1485, and armed with bows and harquebuses, afterwards changed for the halbert or partizan; they are at present dressed after the fashion of Henry VIII.'s time; their first commander or captain was the Earl of Oxford.

GUILD, a Fraternity or Company. The origin of these societies is thus related: "It being a law among the Saxons that every freeman of fourteen years of age should find sureties for his good conduct, certain neighbours consisting of ten families, entered into an association and became bound for each other, either to produce him who committed an offence, or make a satisfaction to the party injured in money; but the precise period when these Guilds were first constituted in England is uncertain, since they existed long prior to their having any formal license for that purpose.

Anderson, in his History of Commerce, says that Merchant Guilds or Fraternities, afterwards styled Corporations, came into use about the close of the eleventh century, and probably originated from the constitutions of the free cities in

Italy, where trade and manufactures had been some time established; the first on record is the Decree to the men of Coventry, to erect a Merchant's Guild, by Edward I., in 1289.

GUNS. (*See Cannon, Fire-arms.*)

GUNPOWDER. If we are not indebted to the Hindoos or Chinese for the invention of gunpowder, it is most probably a discovery of the Greeks, and was originally employed for the entertainment of mankind in the fabrication of fire-works.

The earliest authentic account that we have of this composition, is to be found in a work written by our Roger Bacon, at Oxford, in 1216, and entitled "The Secrets of Art and Nature;" wherein he states, that "from saltpetre and other ingredients, we are able to make a fire that shall burn at what distance we please; and that sounds and corruscations resembling thunder and lightning might be formed in the air, much more to be dreaded than those that happen naturally; inasmuch as by its power armies and cities might be destroyed. As Bacon does not mention this as a new discovery, it is supposed he acquired his information from a work on Pyrotechny, by Marcus Græciscus, an ancient author, who lived about the beginning of the ninth century, and in his treatise entitled "Liber Ignium," describes the nature of the composition requisite for the making of rockets. A knowledge of its destructive powers, and the advantages to be derived from it in war, is said to have originated early in the fourteenth century, in consequence of Bartholdus Schwartz, a German chemist, having left some nitre and charcoal in a mortar, which by some accident took fire, and blew the stone to a considerable distance; hence Schwartz is by Polydore Virgil represented as the inventor of gunpowder, and the name of mortar was afterwards given to a species of artillery employed for throwing balls at a great elevation.

Du Cange states that mention is made of gun-powder in the registers of the Chambers of Accounts in France, as early as the year 1338; and Peter Mexia, in his "Various Readings," informs us that the Moors being besieged in 1343 by Alphonsus XI., King of Castile, discharged a sort of iron mortars upon them, which made a noise like thunder: by others it is affirmed that the Venetians, in their war with the Genoese in 1380, first made use of gun-powder, and that all Italy made complaints of it as a manifest contravention of fair warfare.

It appears by an order of Henry V. in 1418, (noticed in the ninth volume of the *Fœdera*) that gun-powder was then manufactured in this country.

GYPSIES. The origin of this tribe of vagabonds is somewhat obscure—at least the reason of the denomination is so. It is certain the ancient Egyptians had the character of great cheats, and were famous for the subtlety of their impostures, whence the name might afterwards pass proverbially into other languages: be this as it will, there is scarce any country of Europe but has its Egyptians, though not all of them under that denomination: the Italians call them *cingani*; the Germans, *zigeuner*; the French, *Bohemians*, &c. Munster relates that they made their first appearance in Germany in 1517, exceedingly tawny and sun-burnt: ten years afterwards they came into France, and thence passed into England: several historians inform us that when Sultan Selim conquered Egypt in the year 1517, many of the natives refused to submit to the Turkish yoke, but being at length subdued and banished, they agreed to disperse in small parties over the world, when they endeavoured to impose on the credulity of the people by a pretended knowledge of futurity, and gained a number of proselytes to their party in most of the states of Europe. It is conjectured that there are upwards of eight hundred thousand of these

idlers in Europe, of which the desolated Greek provinces of Wallachia and Moldavia contain about 150,000,—a vast proportion to a population of only a million and a-half: here they are in a state of perfect slavery, being purchased and disposable; and though not legally punishable with death by their masters, are nevertheless frequently subjected to cruel treatment.

The first accounts we have of gypsies in England is in the year 1530, when they were directed to leave the country in fifteen days, or be imprisoned.

HABERDASHERS were anciently called *Milliners* or *Milaners*, on account of their dealing in articles imported from Milan; they were incorporated into a company in the year 1447, but it is probable their number was not great, since in the reign of Hen. VI. there were not more than a dozen of Haberdashers in the whole city; however, during the reign of Elizabeth, they had increased so greatly, and their shops made so gay an appearance, that complaints were made of their seducing persons into extravagant expenditure. The business of the Haberdasher was not at that time merely confined to the articles of the ladies' wardrobe, but extended to the sale of cutlery, china and toys.

HAIR. The ancient Greeks and Romans wore their hair long and flowing, till about the year 300 B. C., when Ticius Mena introduced barbers, or hair-dressers, into Rome from Sicily, and with them the fashion of dressing or curling the hair with crimping irons and oils, as also of various dyes and perfumes; and even *false* hair was occasionally worn.

The Britons as well as the ancient Gauls delighted in long hair, and permitted it to grow to a very inconvenient length; for this reason Julius Cæsar on subduing the Gauls, made them cut off their hair, as a token of subjection; and hence, according to some, has arisen the custom of those who made choice of a cloistered life, of having their hair shaven off, to shew that they bid adieu to all earthly ornaments, and made a vow of perpetual subjection to their superiors.

The Anglo-Saxons, Danes, and afterwards the Normans, considered the luxuriance of their locks as an important personal ornament; nor were they easily prevailed upon to retrench them, though instigated thereto by the repeated admonitions of the clergy. We are informed that Bishop Serle preached a Sermon before Henry I., against the detestable fashion of wearing long hair, with such effect upon the King and his courtiers, that they consented to part with their curls, and the prudent prelate not willing to give them an opportunity of changing their mind, instantly drew out a pair of shears from his sleeves, and performed the operation upon the greater part of them with his own hands, beginning with the Sovereign himself; for the parade of long hair, had become more and more obnoxious according to the progress of Christianity, being not only considered as effeminate, but as utterly inconsistent with the profession of those who bore the cross, and who were under a vow to assist in the recovery of the Holy Land.

The practice of shaving the head as a religious ceremony is extremely ancient, and was probably adopted by the Israelites from the Egyptians, and hence found its way into our church, at a very early period, though the precise time is not known; according however to Isidore Hispalensis, the clerical tonsure is of apostolical institution.

It was the custom of people of quality in the eighth century to have their children's hair cut the first time by persons they had a particular honour and esteem for, who in virtue of this ceremony were reputed a sort of spiritual parents or godfathers to them.

Hair-cloth was worn in the middle ages, by monks and penitents, next their skin, probably in imitation of the cloth of camel's hair worn by St. John the Baptist.

HAIR-POWDER. The Romans conceived the sprinkling of gold dust in their hair improved their appearance;

for we read that the Emperor Commodus used to wear a wig powdered with scrapings of gold, which adhered to it by means of glutinous perfumes. The present kind of hair-powder is supposed to have been first used by some ballad-singers at a fair, held near Paris, in 1614; and afterwards by Mary of Medicis, Queen of France, in 1630; it was not, however, introduced into this country till the time of George I., when it is noticed that two ladies of rank wore powder in their hair; yet it is stated that at the coronation of George II., there were only two hair-dressers in London. In 1706, when a tax was laid on persons using hair-powder, it was estimated there were 50,000 hair-dressers in Great Britain, and the produce of the tax, at one guinea a head, though subject to a great many exemptions, amounted to £187,000.

HARE. The ancient Egyptians made use of this animal for the purposes of divination; a considerable number of them were imported from the Continent in 1617.

HARLEQUIN. (*See Pantomime.*)

HALBERD. A military weapon, formerly called alle-berd, as being double-winged or edged, the same as the Bipennes, used by the Danes and Normans.

HAND. The hand was used by the Saxons for the purpose of measuring the height of persons, which is still continued with respect to horses.

HANDKERCHIEF. The Anglo-Saxons had one hanging to the left side.

HARNESS. The French still make use of rope harness, and frequently have nine horses to their Diligences, or stage-coaches, which are driven three a-breast, by two postillions

only; the ancients always harnessed their horses a-breast, never lengthways.

HARP. This instrument is said to have been invented by Jubal before the flood. Bruce discovered the painting of one in an excavated mountain, near Thebes, which had been used as a sepulchre for her kings. The harp of David, called in Hebrew Chinner, ought, according to the opinion of the learned, to have been translated Lyre, from its having but three strings.

The harp was the favourite musical instrument of all the Northern nations, and was in great esteem under the British, Saxon, Danish, and Norman kings; the harper, or minstrel, being always treated with great respect, and permitted to wander unmolested in the camps of opposing armies. It was also, formerly, considered a part of the regalia of Ireland, for history acquaints us that the son of Brion Booromh, a king of Ireland, who was slain in 1014, sought protection at Rome, carrying with him the crown, harp, and other regalia of his father, which he resigned to the Pope; and Adrian IV., in his bull constituting Henry II. King of Ireland, alleges this circumstance as a proof of his sovereignty over the island; these regalia were preserved in the Vatican till the time of Henry VIII., when the Pope sent the harp to that King, with the title of Defender of the Faith, but kept the crown, which was of massive gold. The harp is now deposited in Trinity College, Dublin.

The harp was introduced into the arms of Ireland, in the time of Henry II., and on coins in the time of Henry VIII.; it was quartered with the arms of England by James I.

Pedals to the harp, by which the half notes are produced, were invented by a German, in 1757.

HARPSICHORD. This instrument was invented at Florence about the close of the seventeenth century. The

first brought to England was made by Father Wood, an English monk, at Rome, for Mr. Crisp, and purchased of him by Fulk Greville, Esq.; the pedals were invented by Loeschman.

HAT. Both the Greeks and Romans were many ages without any regular covering for the head : when either the rain or sun was troublesome, the lappet of the gown was thrown over them ; and hence it is that all the ancient statues appear bareheaded, excepting sometimes a wreath or the like ; afterwards a hood was attached to the gown, and occasionally thrown over the head ; and at length a small covered cap, made of the same materials as the gown, became to be usually worn ; and to this day caps of broad cloth, like those made for the convenience of travelling, are common throughout France.

According to Father Daniel, hats were introduced about the commencement of the fifteenth century ; and Charles VII. is described as making his public entry into Rouen in 1449, having on his head a hat lined with red velvet, and surmounted with a plume or tuft of feathers : in process of time the clergy also adopted this part of the habit ; but it was considered irregular ; and several decrees were published, forbidding any priest or religious person to appear abroad in a hat without a coronet, and enjoining them to keep to the use of chaperons, made of black cloth, with decent coronets fastened to them, under the penalty of suspension and excommunication.

The word "hat" itself, is of Saxon origin ; for we read of a fellen *hætt*, made either of felt or wool, being worn by the Anglo-Saxons : it consisted of a cap, composed of the skin of some animal, dressed with the hair upon the hide, the shaggy part being turned outward, like the Phrygian bonnet : hats similar to that worn by Charles VII. are noticed in this country in the reign of Richard II. : the mer-

chant, in Chaucer, has a Flanders' beaver hat : about the year 1470 hats made from felts were exposed for sale : Howe, in his continuation of Stowe's Chronicle, says that in the reign of Henry VIII. the making of Spanish felt hats was commenced upon in England by Spaniards and Dutchmen, before which time and long since the English used to ride in knit caps, cloth hoods, and the best sort in thrummed hats.

In 1571, the manufacturers of knit caps, called cappers, observing the great increase of the wear of hats made of felt, and who had some time previously obtained a law for preventing foreign materials being worked up into hats, obtained this year a second law :—" That every person above seven years of age (with some few exceptions) should wear on Sundays and holidays a cap of wool, finished by some of the trade of cappers, under the penalty of three shillings and four-pence for every day so neglected : " but felt hats were found so superior, especially in wet weather, that they soon afterwards came into general use.

Du Cange mentions the custom of taking off the hat, out of respect or in salutation.

HATCHING. The Egyptians have long practised a method of hatching or fecundating the eggs of their poultry without incubation, by means of ovens, heated to a temperature equal to the warmth of the hen : this mode was first attempted in France by Reaumur, and was practised with success in this country in 1802.

HAWKERS, or Pedlars with Goods, are first noticed in the reign of Edward III.

HAWKING. (*See Falconry.*)

HEALTH. The custom of drinking healths is of obscure

origin, though numberless instances of it are to be met with in the Grecian poets and historians, as well as among the Roman writers. Ovid introduces this usage in his *Metamorphoses*, as of a very ancient date among the Greeks :—"The Athenians," he states, "made a grand entertainment on the safe return of Theseus from killing the Minotaurs, in which they drank his health in bumpers:" and Ascanius, in explaining the meaning of *more Græco bibere*, says, "It was the custom of the Greeks in their libations, first to pay their devotions to the Gods, and then mention their friends in terms of esteem and affection, and wishes for their prosperity."

The Roman gallants used to take off as many glasses to their mistresses as there were letters in her name,—thus Martial :—

" Let six full cups to Nevai's health go round,
And fair Justina be with seven crowned."

The custom of pledging people while they were drinking had its origin in this country soon after it had been reduced by the Danes, who would sometimes stab a native in the act of drinking; the Saxons therefore would not drink in company, unless some one present would be their pledge or security, that they should receive no hurt. Others date it from the death of King Edward, son of Edgar, who was, by the contrivance of Elfrida, his step-mother, traitorously stabbed in the back as he was drinking. "*Hob nob*" is supposed to be derived from the Saxon, "*hobben*," to have, and "*nobben*," to want.

HEARSE. Moveable hearses for the conveyance of the dead, are not noticed till the time of James II.; previous to which even the bodies of Noblemen were either carried on men's shoulders, or on a horse litter.

HEMP. Pliny, though he notices this plant, makes no mention of the threads that can be procured from it, or of its

being manufactured into cordage by the Romans ; it is therefore probable, that the observation of antiquaries respecting hemp being used in the cities of Ravenna and Vienne for the purposes of war, ought rather to be understood of the linum or flax : it was however known to the Anglo-Saxons, and the method of preparing it and beating it into threads, is given by Strutt.

HERALD. The appointment of heralds may be traced to the period in which wars were first commenced upon ; the ancient Greeks had them also for the purpose of superintending their public games ; hence in modern times they were appointed to regulate the proceedings at Tournaments, to ascertain the rank of the challengers, and to examine the arms they made use of ; which establishment had its origin during the period of the Crusades, about the middle of the twelfth century, and was introduced into this country in the time of Hen. II. In the year 1419, the heralds were regularly incorporated by Henry V., their first chapter being held at the siege of Rouen ; and in 1483, a college was founded for them by Richard III. There are at present six heralds in England, viz. : Windsor, appointed in the reign of Edward IV. ; Chester, of Edward III. ; Lancaster, Henry IV. : Richmond, Henry VI. ; Somerset, Henry VII. ; and York, Richard III.

Sir Henry Spelman is of opinion that the title of *King of Arms* was first conferred on such officers in England, as belonged to the *King's Majesty*, while those who appertained to Princes of the blood royal, or to the nobility, were simply styled heralds. Garter principal King at Arms was instituted by Henry V., instead of Guyenne *King at Arms*.

HERALDRY. It is certain that from time immemorial there have been symbolical marks in use among men, to distinguish their particular tribes, and to serve as ornaments for

shields or ensigns ; but these marks were used arbitrarily, and not subject to any particular rules ; for even the eagle was not the constant ensign of the Roman army, but sometimes the wolf or leopard was borne in the standard, according to the fancy of the General.

Some affirm we are indebted to Alexander the Great for the rules of *blazoning* arms ; others that it originated in the time of Augustus, and others again under the Emperor Charlemagne ; but according to Father Menestries, a French author, whose authority is of considerable weight, Henry L'Oiseleur (the falconer) who was raised to the Imperial Throne of the West in 920, by regulating tournaments in Germany, gave occasion to the establishment of family arms, or hereditary marks of honour, which undeniably are more ancient and better observed among the Germans than by any other nation ; it was then that coats of arms which were a kind of livery, composed of several bars, fillets and colours, whence came the *fess*, *bend*, *pale*, *chevron*, &c. were first instituted : this writer also asserts that none were entitled to bear arms who had not first been introduced at a tournament ; these who enlisted in the Crusades, the first of which occurred in 1096, took armorial ensigns, which were generally crosses of different colours.

Brass plates, with armorial bearings engraved upon them, of the date 1144, have been discovered in the Temple church, of London.

Cambden refers the original of *hereditary arms* in England to the time of the first Norman kings ; he admits, however, their use was not fully established till the commencement of the reign of Henry III., and instances several of the most respectable families, wherein, till that time, the son always bore different arms from the father.

About the commencement of the fourteenth century, it became customary to paint the arms on glass, both in churches, and in the large halls in the castles ; they were also

engraved on the silver dishes and other pieces of plate, as appears by an inventory of the crown jewels, taken in 1334; and embroidered on the canopies of state, as well as on the court dresses of the Noblemen, and this fashion continued till the commencement of the sixteenth century.

It is not exactly known when the *quartering of arms* was introduced; the first instance of it in this country appears on the tomb, in Westminster Abbey, of Eleanor, daughter of Ferdinand III., the first wife of Edward I., who died in 1290, which has the arms of the kingdom of Castile quartered with those of Leon upon it. Edward III., in 1341, quartered the arms of France with England, which was continued till the year 1801.

Richard II. is said to have first had *supporters* to his arms, which were angels.

HERESY. William Santree, the parish priest of St. Osithes in London, and formerly of St. Margaret's at Lynn, in Norfolk, having imbibed the principles of Wickliffe, was the first person who suffered the punishment of death by burning, under the statute passed against heretics in 1400, and the first martyr for the Reformation in England: he was charged with affirming that he would not worship the cross on which Christ suffered, but only Christ who suffered on the cross;—that if any man had vowed to make a distant pilgrimage, he would do better to disburse the expence of such a journey in alms, than to perform it;—that it was more the duty of the clergy to preach the Word of God than to say the canonical hours;—and finally, that the sacramental bread (which he, however, acknowledged to be the bread of life) continued to be bread after it was consecrated: for this he was pronounced to be judicially and lawfully convicted as a heretic, and consequently to be degraded, deposed, and delivered over to the secular arm.

This being the first condemnation of the kind, Archbishop

Arundel, who presided at the convocation, was punctual in all its forms, that they might serve for an exact precedent in future. Sautree was brought before the Primate and six other bishops, in their pontifical attire, in the cathedral of St. Paul's; he also appeared in priestly vestments, with the paten and chalice in his hands: Arundel then stood up, and in the name of the Father, and of the Son, and of the Holy Spirit, degraded him first from the priestly order;—and in sign of that degradation took from him the paten and chalice, and plucked the priestly casule from his back; the New Testament was then put into his hands, and taken from him; the stole being at the same time pulled off, to degrade him from the office of deacon; by depriving him of the alb and maniple, his deprivation of the order of sub-deacon was effected; the candlestick, taper, and urceole, were taken from him, as acolyte; the Book of Exorcisms, as exorcist; the Lectionary, as reader; he then remained in a surplice, as sexton, and with the key of the church door: these also were taken from him: the priest's cap was then to be laid aside,—the tonsure rased away, so that no outward mark whatever of his order might remain: the cap of a layman was placed upon his head, and Arundel, the Archbishop, then delivered him as a secular person to the secular court of the High Constable and Marshal of England, and he was accordingly burnt at the stake on the twenty-sixth of February, 1401.

HERRING. The common herring seems to have been unknown to the ancients, though it has often been confounded with the halec, (a kind of sauce made of any salt-fish, in use among the Romans.) The Hollanders were the first who, about the year 1164, commenced upon the herring fishery; and in the year 1313 we have an account of the seizure of a ship of Lynn, in the port of Bergen, which had been fishing on the Norway coast for herrings; and as loadings of herrings carried to a distance must have been salted, it is evident

that salted herrings, either wet or also dried, called *red herrings*, were in those times a mercantile commodity ; a considerable quantity of herrings were also shipped from Portsmouth for the use of the army and fleet of Edward III. in 1338 ; and in 1394 we read of their being barrelled and salted at the Port of Whithy.

Willoughby, in his *History of Fishes*, states that William Buckelsy or Bechalen, a native of Bier Uliet, who died in 1397, rendered his name immortal by the discovery of the present method of curing and pickling herrings ; and that the Emperor Charles V. coming to the Low Countries, made an excursion to the isle of Bier Uliet with the Queen of Hungary, on purpose to view the tomb of this first barreller of herrings.

It is not improbable that this Bechalen might have acquired the art from the people of Yarmouth and other ports of England, where herrings were not only salted and dried for red herrings, but salted and barrelled up wet, at different times, from the year 1306 to 1360. Yarmouth has long been celebrated for its herring fair, which was regulated by an act called the Statute of Herrings, in 1357.

HIGHNESS. This was the common title of our kings till the time of Henry VIII.

HIGH-WAYS, or Public Roads, were first made in various parts of England by the Romans : the first law relating to them was passed in the thirteenth of Edward I., 1285, when they were directed to be widened, and cleared of trees, &c., within two hundred feet of each side of the road, for the prevention of robberies : a toll was granted in 1346 for the repair of the road leading from St. Giles's to Temple Bar and Charing. The first general statute, directing that the respective parishes should be answerable for the state of the roads belonging to or intersecting them, was passed in

1555 ; and the first toll-gates erected by law in England were at Wadesmill, for Hertfordshire ; Caxton, for Cambridgeshire ; and Stilton, for Huntingdonshire, in 1663.

HINGES, Gates, and Doors, were originally constructed on pivots, let into the floor and threshold, as is still customary in India. Hinges were probably unknown to the Romans ; but the common hinge has been discovered in the sites of ancient British towns.

HISS. Job, speaking of the wicked under humiliation, says that, " They shall clap their hands at him, and hiss him out of his place. At public representations the ancients used the syrx as a cat-call.

HISTORY has generally been divided into three periods ; the first from the creation to the deluge, which age is reckoned uncertain, because no more of it is known than the short account contained in the Holy Scripture ; the second from the deluge to the first Olympiad, which, from the many feigned stories related in it, is called the fabulous age ; and the third from the first Olympiad to our own times is called historical, because the actions done in that period are recorded by writers of acknowledged character. Herodotus, who flourished about the year 600 B. C., is the most ancient Greek historian ; and as to the Romans, Livy himself confesses that scarce any account was kept of their public transactions till after the city had been taken by the Gauls,—that is, one hundred years later than Herodotus. After the decline of the Roman empire there are no historians whose writings are worthy of credit till the time of Giddes, the British, and Gregory of Tours, the French historian, who flourished towards the close of the sixth century. Eugenius VII., King of Scotland, in 702, directed the acts of his predecessors and of his own time to be recorded in the monasteries, which

was afterwards adopted in England ; and as the monks were for many ages the only people who were capable of either reading or writing, we must of course look to them as the most authentic historical writers of the middle ages.

HOAX. The first hoax on record was practised by a wag in the reign of Queen Anne, and is noticed in the papers of that day :—" A well-dressed man rode down the king's road from Fulham at a most furious rate, commanding each turn-pike gate to be immediately thrown open, as he was a messenger conveying the news of the queen's sudden death : the alarm instantly spread into every corner of the city : the trained bands, who were on their parade, furled their colours, and returned home with their arms reversed ; the shop-keepers displayed their sables ; and many were desirous of purchasing mourning before the news should become more known." The author of the hoax was never discovered.

HOBSON'S CHOICE.—A proverbial expression, applied to that kind of choice of which there is no alternative, and which originated from a livery-stable-keeper at Cambridge, who, in letting out his horses, obliged each customer to take the one nearest to the stable-door.

HOLIDAYS were much encouraged by the clergy, with the view of adding to their wealth by new oblations. Among the Anglo-Saxons, the Saturday afternoon being the Sunday eve, was devoted to prayer, and people were assembled by tolling a bell—hence originated the half-holiday at schools on this day.

HOMILY. In the early ages none but the bishops were allowed to preach, and all the homilies, both of the Greek and Latin fathers, were composed by them. St. Chrysostom, who lived in the fifth century, was the first who preached at

stated times. The homilies of the established church of England are contained in two books, the former of which was published in the reign of Edward VI., and the latter in the beginning of the reign of Elizabeth, from the writings of Cranmer, Ridley, Latimer, and Jewell.

HOP: so called from the German, "hoppe." It does not appear that either the Grecians or Romans were acquainted with this plant, or that it was made use of by the early Germans in the fabrication of their beer, although the plant grows wild in most parts of Europe. The first written intelligence respecting it is in a letter of donation from Pepin, King of France, wherein he speaks of humulonariæ, which, without doubt, must have been hop-gardens; and it is noticed that Adelard, Abbot of Larby, in 822, exonerated the millers belonging to his district from the service of labouring in his hop-grounds, using the words "humlo" and "brace" for the corn and malt required for beer. Hops were cultivated in Germany for the purpose of brewing about the close of the thirteenth century, and shortly afterwards in the Netherlands.

Gmelin relates that the Chinese have a kind of beer, in which hops, formed by presses into masses, shaped like a brick, were added to it: this custom of pressing the hops into cakes was also practised in Bohemia, and has been recommended as a means of preserving the strength of the hops for a number of years.

The English, according to the most credible accounts, acquired their knowledge of this plant and its uses, from a native of Artois, who in the beginning of the fifteenth century introduced hops into this country; but the addition of them to beer was for a long time considered as an adulteration of that liquor, and the cultivation of the plant was, in consequence of a petition from the House of Commons, forbidden in the reign of Henry VI.; so late indeed as in the time of Henry VIII., the brewers were prohibited the use of

hops under severe penalties ; however, about the end of his reign the prejudice seems to have subsided, for hop grounds were cultivated in the reign of Edward VI., and in the course of a few years great quantities of them were produced in this country for the purposes of brewing.

HORN-PIPE. This musical instrument, so named from its being made of wood and horn, though now unknown in this country, was in much esteem among the ancient Britons, and some years ago common in Wales and in the West of England.

HORSE. The period when this noble animal was first domesticated cannot be ascertained ; according to Virgil the Centaurs, a tribe of the Lapithæ, who inhabited the city of Pelethronum, adjoining to Mount Pelion, were the first who broke in horses for the purposes of the chariot and saddle ; they were in the first instance employed for drawing only, and some suppose the ancient Greeks were unacquainted with the use of them for riding ; it is certain Homer, in his account of the siege of Troy, speaks of horses as being used merely for the chariots, but the method by which these chariots were occasionally driven, proves also, that the Greeks were no contemptible horsemen.

So when a horseman from the watery mead,
 Skilled in the manage of the bounding steed,
 Drives four fair coursers, practised to obey,
 To some great city through the public way ;
 Safe in his art, as side by side they run,
 He shifts his seat and vaults from one to one,
 And now to this, and now to that he flies,
 Admiring numbers follow with their eyes.

And again in the fifth book of the *Odyssey*, Ulysses shipwrecked and sitting astride a plank, floating on the waves, is compared to a man on the back of a horse, preserving his

sent in defiance of the attempts of the animal to remove him.

The Romans seem to have been little acquainted with the use of horses, till their wars with the Carthaginians pointed out to them the advantages of having cavalry in their armies.

In the sacred writings, the ostrich is stated by Job to be hunted by horsemen, and the Israelites were pursued by Pharaoh with his chariots and horsemen. The Israelites themselves were forbidden to multiply horses, lest they should be tempted to ascribe to them alone the success of their arms; consequently their armies consisted entirely of foot soldiers, and the horses of the Canaanites and other states, when taken in war, were generally killed. The Rabbins also assert, that on the death of the King of Israel, the few horses in his stables were destroyed. The Judges and Princes rode on mules till the time of Solomon, who seems to have acted contrary to all the other Kings of Israel, for he had forty thousand stalls of horses for his chariots, and twelve thousand horsemen.

The Venerable Bede informs us, that the English began to use saddle horses about the year 631, when prelates and others rode on horseback, who till that time were accustomed to walk; and in the reign of Athelstan the English became so jealous of their horses, which were also held in high estimation by foreigners, that a law was made by that monarch to prohibit the exportation of them, whilst at the same time, to improve their breed, the introduction of foreign horses was encouraged.

It is estimated that there are now about 1,300,000 horses in England.

The amusement of comparing the relative swiftness of horses and the skill of their drivers, by opposing them to each other, was introduced in the twenty-fifth Olympiad, when the first chariot races commenced; this was followed in the thirty-third Olympiad by the racing of riding horses, of full

age, for those under age, called *polos keles*, were not admitted till the one hundred and thirty-first Olympiad; these races were run upon the *Stadia* of Olympia and Athens and were about four miles in extent. The Romans had their race-course in the *Circus*.

The diversion of racing was practised by the Anglo-Saxons, though we have no particular account of it till the time of Henry II., when Fitz-Stephen records the great delight the citizens of London experienced upon these occasions. During the reign of Elizabeth the rage for keeping race-horses was carried to such an extent, as materially to injure the fortunes of many of the nobility. Jarvis Markham, who wrote on the management of horses, in 1599, mentions horses being run for money: but at this time there were only private matches made between gentlemen, who were their own jockies, and rode their own horses.

Public races were established by James I. at Croydon and Garterly in Yorkshire. Charles I. had them at Hyde Park and at Newmarket, where a house was erected for his accommodation; the prize was generally a gold or silver bell, hence the phrase of *bearing the bell*, as implying excellence or superiority. Charles II. revived the races at Newmarket, changing the prize from a bell to a cup, which now assumed the name of plate. George I., towards the end of his reign, discontinued these plates, and gave the sum of one hundred guineas in their room.

The practice of *shoeing* horses originated with the Romans, who at first made use of the *pedillum*, or loose shoe, which was tied round the hoof; the present mode of nailing the shoe to the hoof had its rise in the fifth century, and the circular or crescent form of the shoe occurs in the ninth century. The Normans introduced the practice into England, and Henry de Ferrers, who came over with William the Conqueror, and whose descendants still bear in their arms six horse shoes, is said to have acquired his surname, from

the circumstance of his having the superintendence of the farriers.

HOSPITAL. Neither the ancient Greeks or Romans had any public buildings appropriated for the reception of the diseased and indigent, and the erection of them is therefore to be entirely attributed to the benevolent influences of the Christian religion.

In the first ages of the church the bishop had immediate charge of all the poor, both sound and diseased, also of widows, orphans, and strangers; and when the churches came to have fixed revenues attached to them, it was decreed that one-fourth part thereof should go to the relief of the poor; and in order more effectually to provide for them, divers houses of charity were built, which have since been denominated hospitals.

In the course of time, however, separate revenues were assigned for the hospitals; and particular persons, out of motives of piety and charity, gave lands and money for the erecting of them.

The first hospital founded upon this principle was built at Rome in the fifth century by Fabiola, a lady of rank, and the particular friend of St. Jerome. Several hospitals were established in Palestine for the recovery of the sick and wounded, and brotherhoods were formed, under the appellation of knights' hospitallers, who attended the sick, and acted as physicians.

In the middle ages, the hospitals being under the direction of the monks, were built near the monasteries: the earliest noticed in our history is the one founded at Canterbury in 1070, when Lanfranc was archbishop.

The exposure of children by parents, who were incapable of providing for them, under the hopes that some humane person might be induced to adopt them, was common both among the Greeks and Romans; nor was it completely

prohibited till about the close of the fourth century: yet, though various provisions were made, from time to time, by the emperors, for the care of these children, there was no permanent establishment instituted for their maintenance till 1180, when the Hospital of the Holy Ghost was founded at Rome for that purpose.

The Foundling Hospital in London was established at the solicitation of Thomas Coram, Esq., by Royal Charter, in 1740, and the building was completed in 1753, Taylor White, Esq., Chief Justice of Chester, (the grand-father of the author of this work), being nominated treasurer.

HOUR. The original division of the day by the nations of the east was into quarters, each of which were again divided by the Egyptians into three parts, called hours, from "horus," the sun, which custom, according to Herodotus, was adopted by the Greeks, and afterwards by the Romans: but as the natural day, which was regulated by the rising and setting of the sun, was of unequal duration, the length of the quarters and hours were of course subject to daily fluctuation.

There can be no doubt but that men of science among the ancients were acquainted with *equal hours*, which they made use of in their astronomical calculations. The sun-dial (probably invented by the Egyptians) is noticed in the time of Ahaz, 741 B. C.: the Greeks were acquainted with it 550 B. C.; and the Romans about 293 B. C.: yet still the irregular method of reckoning time by the quarters of the natural day and night, called "vigils" and "watches," continued during the whole period of the Roman Government, and is still practised throughout Asia, and in all Mahometan states. The convenience of dividing the day and night into portions of equal duration, and of calculating the time by these divisions, was not discovered or generally adopted in Europe till long after the invention of regular time-pieces or clocks.

HOURL-GLASS. The Greeks marked different portions of time by means of water running into or out of a vessel, called a clepsydrae, which induced the Romans to make use of sand for the same purpose—hence the origin of hour-glasses, which were common in monasteries in the middle ages, and were carried about like watches.

HUNTING. Fox-hunting with hounds regularly trained, is mentioned by Orwin in 1591, as but lately introduced into England.

ICHTHYOLOGY. The first in modern times who attempted a classification of fishes, was Pierre Balen, a physician at Paris, in 1551. The ancients were but little acquainted with the history of fishes.

JEWELS. The sardius, topaz, carbuncle, emerald, sapphire, diamond, ligure, agate, amethyst, beryl, onyx, and jasper are enumerated as the jewels which formed the Urim and Thummim inserted into the breast-plate worn by the Jewish High Priest. Pliny is the earliest writer who has attempted to give a general history of precious stones, freed from the marvellous and superstitious virtues formerly attributed to them. Madox, in his *History of the Exchequer*, notices eleven rich garlands, with emeralds, pearls, sapphires, and granites of the value of £145, as bought for the Queen of Henry III.

JEWS. These people came into England in the time of Edward the Confessor, who took them under his protection, at the same time prohibiting them from entering the service of any other person; a considerable number of Jews also accompanied William the Conqueror, and through their means the Arabian philosophy was chiefly communicated from Spain; they were employed as the collectors of taxes, and placed under the protection of the Barons. It appears from a book lately published at Berlin, that the number of the Jews, which, during the reigns of David and Solomon, amounted to about

four millions, is at present estimated at 3,900,000; of which 531,000 reside in the Turkish dominions, 600,000 in Africa, chiefly at Morocco and Fez, 437,000 in Russia, 232,000 in Poland, 454,000 in Austria, 135,000 in Prussia, 60,000 in France, and about 12,000 in Great Britain.

ILLUMINATIONS. The ancients were accustomed to illuminate their houses on public occasions of rejoicing, and which it is presumed they derived from the Asiatics; the first illumination in honour of an individual, was in compliment to Cicero on his detection of Cataline's conspiracy.

ILLUMINATORS. The practice of embellishing books with ornamented letters and small paintings, is of great antiquity; Pliny mentions that Varro wrote the lives of 700 illustrious Romans, which he enriched with their portraits, and Cornelius Nepos that Pomponius Atticus, the friend of Cicero, was the author of a work on the actions of the great men among the Romans, which was ornamented in the same manner. There are now many ancient works of this description, which, by means of these paintings, point out the manners, customs, habits, ecclesiastical and civil, instruments of war, and household furniture, and are of great use in illustrating many important facts relative to the history of the times in which they were executed. A miniature drawing is prefixed to each of the Gospels brought over to England by St. Augustin, in the sixth century, and still preserved in the library of Christ's College, Cambridge. The curious drawings and elaborate ornaments of St. Cuthbert's Gospels, made by St. Ethelwald, and now in the Cottonian library, exhibit a striking specimen of the state of the arts in England in the seventh century; during the middle ages this mode of illuminating was generally practised by the clergy, and continued till about the close of the sixteenth century, when, in consequence of the general introduction of printing,

it gradually declined. A beautiful illuminated manuscript of the church service is preserved in the library at Rouen.

JACK. This well known kitchen instrument for turning a spit, is supposed to have been invented in the fifteenth century. Montaigne describes one made after the present manner, which he met with in Switzerland, in 1580. The smoke-jack is noticed in a book on cookery, published by Bartolomeo Scippi, cook to Pius V., in 1570.

ICE. The ancient Greeks and Romans were accustomed to cool their liquors by means of ice or snow, which they either mixed with their wine, or placed the jars of wine in vessels containing ice. Alexander the Great, when he besieged the city of Patra, caused trenches to be dug, which he filled with snow, and covered over with oak branches, to preserve it; the ancients had also a method of cooling water by first boiling it, and then placing it in porous vessels in the air, the outsides of which were kept continually wet.

The practice of cooling liquors was revived in Italy in the fifteenth century. Champier, the physician of Francis I., and who attended him during his wars, mentions the injurious, if not dangerous, custom the Spaniards and Italians had of putting ice and snow into their liquors; this nevertheless became common in France in the reign of Henry III.

About the commencement of the sixteenth century, the Italians had become acquainted with a mode of cooling their liquors by means of saltpetre, similar to the Indian custom, and which is thus described by Blasius, a Spaniard, in 1550. A long necked bottle containing the liquor, is immersed in a basin of water, occasionally supplied with saltpetre, and kept for some in continual motion; it is then taken out, and placed in a draught with a wet napkin over it, and becomes in a short time as cold as if it had been placed in ice.

Iced fruits were brought to the table in the beginning of

the seventeenth century, soon after which the art of congealing creams was discovered. In 1750 the confectioners of England adopted the plan of establishing ice pits for preserving it throughout the year.

The Indians have a method of procuring ice, by exposing shallow porous vessels laid on straw to the night air, which gives a small crust of ice, that is taken away and carefully deposited in a pit lined with straw before sunrise.

An artificial mode of making ice by a mixture of salt and snow, is mentioned by Lord Bacon. A method of procuring ice by extracting the air from the water, by means of the air-pump, has been recently discovered.

IMAGES. In the Book of Genesis we are informed that Rachael stole the household gods of her father, when she fled with Jacob; and there seems to be little doubt but that the adoration of images was the common practice of all nations, excepting the Israelites, who having a peculiar religion revealed to them, were early directed to avoid idolatrous worship; and therefore Jacob, soon after this event, directed all his household, and the strangers that were with him, to deliver up the strange gods in their possession, and buried them under an oak near Shechem.

The first instance that occurs in any credible author of the adoration of images by Christians is that recorded by Tertullian, of certain cups or chalices, on which were represented the parable of the good shepherd carrying the lost sheep on his shoulders: but this seems merely to prove that in his time the church did not consider emblematical ornaments on cups as improper.

The custom of admitting pictures of saints and martyrs into the churches, which was the first source of image worship, was common in the fifth century; and the images themselves, which at first were used as an aid to devotion, began by this time to be actually worshipped.

In the middle ages the makers of images used to confess and do penance, before they were qualified to commence on so sacred an occupation ; and it was the custom to send the waxen images of such persons as were sick to shrines, to have prayers said for their recovery.

IMPRESSING OF SEAMEN is a part of the ancient common law. The first statute which alludes to the practice, is the 2 Rich. II.

INCENSE. Oil, extracted from various kinds of spices, was burnt on the altar of incense, placed before the veil of the ark. Herodotus relates that on the altar of Jupiter Belus, the Egyptians annually consumed a thousand talents' weight of frankincense.

INDIAN RUBBER was first brought from America about the year 1700 ; it is there called caoutchoac, and is the juice of the quito tree.

INDIGO. It is presumed that the Romans were not acquainted with this plant, which was brought into Europe by the Portuguese after the discovery of the passage to India by the Cape of Good Hope, and is first noticed at Antwerp in 1560, when its value as a dye stuff became to be appreciated : but the use of it as a dye was afterwards prohibited, either from its being considered as injurious to the health of those employed in the forming of the dye, or as interfering with the cultivation of woad, from which the principal blue dye in Europe was procured.

The first mention of indigo in England is in 1581 ; but the plant from which it was produced is first noticed by Parkinson in 1640.

INDULGENCES. Absolutions or indulgencies being the

remission of a punishment due to sin, were the invention of Pope Urban II. in the eleventh century, who pretended that there existed an immense treasure of merit, composed of the pious deeds and virtuous actions which the saints had performed, beyond what was necessary for their own salvation, and was therefore applicable to the benefit of others, and that he, as guardian and dispenser of this precious treasure, was empowered to assign to such as he thought proper, a portion of this inexhaustible source of merit, suitable to their respective guilt, and sufficient to deliver them from the punishment due to their crimes.

These indulgences were first granted as a recompense for those who went in person to recover the Holy Land from the infidels, but were afterwards publicly sold for the purpose of increasing the Pope's revenue. In a Book of Rates, called "The Tax Book of the Holy Apostolic Chancery," printed in 1514, the prices of absolution for various sins are mentioned, amongst which that for murdering a layman is stated at five groats; but for laying violent hands on a priest, without shedding blood, nine groats. The great abuse of the sale of indulgences under Leo X. led to the first Reformation of religion in Germany, since which the Popes have been more sparing in the exercise of their power.

INFANTRY. This word takes its origin from one of the Infantas of Spain, who hearing that the army commanded by the king, her father, had been defeated by the Moors, assembled a body of foot soldiers, and with them engaged and defeated the enemy. In memory of this event, and to distinguish the foot soldiers, who were not before held in much consideration, they received the name of infantry.

INK. The ancients used ink of various colours, but it was generally very thick, and of the consistence of paint; for we read that Demosthenes reproaches Eschines with

labouring in the grinding of ink, as painters do in forming their colours; the substance also found in an ink-stand at Herculaneum, resembled a thick oil or paint; and in the ancient manuscripts, a relieve is visible in the letters, when the leaf is held to the light in a horizontal position.

The ink used by the Anglo-Saxons was much superior to that of succeeding ages—in fact, no manuscript written with the modern kind of ink would be legible after a few centuries, from the corroding nature of the acid it contains; but this circumstance, since the invention of printing, is but of little importance.

The ancients were acquainted with several kinds of ink, which we have denominated *sympathetic*, as being rendered conspicuous only after a certain operation has been performed. Among the methods which Ovid teaches young women to deceive their guardians when writing to their lovers, he recommends new milk, and making the writing legible by powdered charcoal—

“Tuta quaque est, fallitque oculos, e lacte recenti
Littera: carbonis pulvere tange, leges.”

Ascanius proposes the same means to Paulinus, and also teaches other methods of secret writing.

Several metallic solutions have been recently discovered, which are perfectly colourless till acted upon by another—thus the solution of lead in vegetable acid, becomes black on being exposed to the vapour of arsenical liver of sulphur, the method of preparing which is mentioned by Borel in 1658: there are also various other kinds of inks, which become visible on holding them to the fire, or exposing to the air, mentioned by Baptista Porta, Lemery, and others.

INN. Houses for the reception of travellers are first noticed in the time of Richard II., whose cognizance was the White Hart with a Gold Chain; the White Swan, legally gorged, was that of Henry IV.; and the Blue Bear, of Richard III.

INOCULATION. It is generally believed that the small-pox existed in China and India many centuries previous to its appearance in Europe; but there are no very authentic accounts of its travelling to the west until the period of the siege of Mecca by the Abyssinians, A. D. 573. Alexandria soon afterwards felt the effects of its contagion; and the first description of the disease is given by Ahron, a physician of that city, in the seventh century: from that time the disorder was common among the Arabians or Saracens, and to them is to be imputed the introduction of it into Spain and Europe.

The art of inoculating the small-pox was most probably an accidental discovery; and though said to have been practised under one mode or other, both abroad and in this country, for a considerable period, yet have we no clue for tracing its origin, since it is not noticed by any of the Arabian writers, though practised in the seventeenth century by some of the lower orders of the Turks: we may therefore consider ourselves solely indebted to Lady Wortley Montague for introducing inoculation into this country from Constantinople, where she had for some time resided with her husband, the British ambassador; and in conformity to the practice of the people of that city, had allowed her son, a child of about six years of age, to be inoculated for the small-pox. On her return to England in 1722, her daughter, of nearly the same age, was subjected to the same ordeal, which proving in both cases favourable, the general introduction of the system was strongly recommended to Government as a means of checking a disorder then considered in the light of a plague: accordingly, seven unfortunate people, whose lives had been forfeited to the laws of the country, most gladly submitted to undergo the experiment of inoculation; and afterwards his present Majesty's grandfather permitted his children, the Princesses Amelia and Caroline, to be inoculated, which example was followed by the nobility and gentry, and the practice soon became universal.

Although the introduction of inoculation had tended very considerably to reduce the malignancy of the small-pox, yet it nevertheless too frequently proved fatal; the discovery, therefore, of any method which might lead to the extinction of the disorder, became highly desirable; and this seems to have been nearly effected by introducing the virus of the cow-pox, an eruption frequently discovered on the udders and teats of that animal, into the human constitution, instead of the natural small-pox; for it had been observed, that most of the milkers attached to the dairies in England, whose hands had been affected with this virus, were never afterwards infected with the small-pox, either by inoculation or long exposure to the most virulent contagion of that disease. This remarkable circumstance induced Dr. Jenner, a physician, at Berkeley, in Gloucestershire, to examine the subject with that care and attention it merited; and having successfully tried the experiment of inoculation by this virus, he published his observations thereon, in 1798, strongly recommending it under the term of *Vaccination*, as a preventive of the small-pox, and though many hundreds of thousands have been vaccinated, there is scarcely on record a single unequivocal instance of its having proved fatal.

INSURANCE. The Roman Government, on particular occasions, was accustomed to guarantee the risk attending the conveyance of goods either by sea or land; thus Livy informs us, that when the Roman army in Spain was distressed for provisions, clothes, and other necessities, a company undertook to convey to them every thing they stood in need of, provided the State would make good their loss, in case their vessels should be either shipwrecked or taken by the enemy, but as no premium was given, this can be considered only in the light of an indemnification. Something more in the nature of an insurance appears in one of Cicero's letters, wherein he expresses his hope that he may find at

Laodicea, security, by means of which he can remit the money of the Republic, and which could only be effected either by insurance or bills of exchange.

No traces of Insurance are to be found either in the maritime laws of the Isle of Oleron, or in those of Wisby in the island of Gutthland, neither are they noticed in the general regulations of the Hanseatic league.

Some have said, without sufficient authority, that the practice of insurance was introduced by the Jews in 1192; and others have sought its origin, about the year 1560, in the great woollen commerce that subsisted between England and the Netherlands. But as the maritime commerce of the Italian states appears to have been carried on to a very considerable extent, towards the end of the thirteenth century, it is very probable that insurance came into use in Italy, about that time; from whence it was transplanted into all the countries, where the Lombards had established their trading companies.

The earliest ordinance now extant on the subject of insurances, is that of Barcelona, supposed to have been published about the year 1435.

Malyne informs us, that insurance was introduced into England by the Lombards, somewhat earlier than in the neighbouring countries on the Continent; and that the insurance policies at Antwerp, were drawn up conformably to those of Lombard-street. The preamble to our first law on insurance, passed in 1601, states that it had been an *immemorial usage* among merchants, both English and Foreign, when they made any great adventure, to procure insurance to be made on their ships or goods adventured, from which it may be reasonably supposed, that insurance must have been in use in England long before the middle of the preceding century.

Insurances against fire were first effected in this country in 1667. The Hand-in-Hand Fire Office, instituted in 1696, is

by many years prior to any similar establishment on the Continent.

INTEREST, called Usury (*Usura*) by the Romans, was under certain restrictions permitted under the Roman Government, though confined to a centisimum, or one per cent. As the Jews however never lent money to each other on interest, so the early Christians attempted to follow their example, but the necessities and exigencies of men in matters of commerce rendered their endeavours fruitless. Edward the Confessor, who had been educated in France, prohibited usury; but this law, as far as respected the laity, was repealed in a Council held at Westminster, in 1196.

The word *interest* first occurs in 1274, in an account of a discharge given by the Templars to Edward I., for the sum of 24,974 livres, borrowed from them, and for 5,336 livres, 6 sols, and eight deniers, *super custibus, dampnis et interesse*, that is, for costs, damages and interest; and from this date the word Usury was gradually banished, or confined to exorbitant and illegal interest.

The legal interest in England, in 1199, was 10 per cent.; in 1300, 20 per cent.; in 1558, 12 per cent.; in 1571, 10 per cent.; in 1625, 8 per cent.; and in 1714, 5 per cent., at which it still remains.

IRON. The use of this metal is of very high antiquity, Tubal Cain being noticed as an artificer in brass and iron, before the deluge: it is also mentioned frequently in the Pentateuch, as employed in the fabrication of swords, knives, and various other sharp-edged instruments; and the value attached to it, may be formed from an expression in the eighth chapter of Deuteronomy, where Moses, in his description of the Land of Promise, tells the Israelites that it is "A land where stones are iron, and out of whose hills they may dig brass." Herodotus informs us that an iron saucer, very

curiously inlaid, and of surprising workmanship, was presented by Alyattes, King of Lydia, to the Delphic Oracle.

Previous to the arrival of the Romans this metal, according to Strabo, was purchased by the Britons of the Phœnician merchants, and was considered so valuable as to be formed by them into money, and fabricated into ornamental trinkets: the Romans, nevertheless, discovered plenty of iron-stone in Britain, and established imperial founderies for iron, constructing forges in different parts of the kingdom for manufacturing spears and other military instruments, particularly in the forest of Dean, in Gloucestershire, where their forges and tools, together with great heaps of the iron-stone, cinders, &c., have been of later times dug up: this metal was, however, very scarce in the time of Edward III. as in his reign a law was passed, prohibiting the exportation of it. The method of fastening iron by melted lead, is mentioned by Vitruvius.

JUBILEE. The first of our kings who proclaimed a jubilee was Edward III., on his attaining the age of fifty, in 1362, when all prisoners were pardoned, except those confined for treason; and again, on his completing a reign of fifty years in 1376. Our late Sovereign, George III., had a jubilee in 1809, on occasion of his having attained to the fiftieth year of his reign.

JUGGLERS. The Egyptians, at a very early period of their history, affected to be acquainted with the occult sciences, and, in fact, most of the ancient priests were jugglers, and by their deceptions, contributed to the veneration attached to the idols and mysteries of their religion: the art of *breathing flames* was practised by a Syrian, named Eunus, 150 B. C.: the *paylli* or *serpent-eaters* of Herodotus are still common in Egypt: the *hirpi*, a people near Rome, would walk through *burning coals*; and in the trial by ordeal, the

accused was to *touch red-hot iron* without being hurt, both of which might be accomplished by making the skin callous with spirit of vitriol: the exhibition of balls and cups; of muscular strength; horsemanship, rope-dancing, and balancing, are all of great antiquity.

IVORY is first noticed as being used in decorating the throne of Solomon. Strabo says that the Britons traded with the Phœnicians for ivory boxes.

KALEIDOSCOPE. This optical instrument is first noticed by Baptista Porta in his *Magia Naturalis*, under the name of polyphaton. Kircher also describes a similar invention of his own : but the particular application of this principle in the case where the two reflectors are inclined to one another, so as to form a series of symmetrical images, presenting innumerable beautiful patterns, was discovered by Dr. Brewster in 1814.

KEY. Both Pliny and Polydore Virgil maintain that the key was invented by one Theodore, of Samos. Molinus is of opinion that keys at first only served for the untying certain knots, wherewith the doors were formerly secured. Eustathius assigns the invention of keys to^d the Lacedemonians, who made them of wood, having three single teeth, in the form of the letter E. In various parts of the east, particularly in Egypt, the locks and bolts of the houses are, according to Thevenot and Turner, still made of wood.

KING. Cambden derives this word from the Saxon, "Cyning," and the title, he says, was first assumed by the Saxon chieftain Hengist, and adopted by his successors : the term "Emperor" was also occasionally used by the Saxons ; and that of "Majesty" by the Normans : the title of "Grace" occurs in the the time of Henry IV. ; "Excellent Grace," Henry V. ; "Highness" and "Royal Highness," Henry VIII.

Till the reign of John, our kings in their proclamations, &c., wrote in the singular number, but afterwards in the plural.

KISSING. Saluting one another on the face was an ancient and common custom among both Jews and Gentiles—thus we read that Laban, among other things, accuses Jacob of taking away his daughters by stealth, and as captives, without even suffering him to *kiss* them. This custom was adopted by the primitive Christians at their religious assemblies, especially after prayer, as a sign that however they might differ in respect of temporal advantages, yet, as Christians, they were equal.

Kissing the hand was considered as a token of respect by the Persians, and therefore permitted by the Roman emperors—hence the custom at our court, where it appears to be considered as a respectful acknowledgment for some benefit conferred.

The custom of kissing the Pope's toe is first noticed in 708, when Constantine had that honour conferred upon him by the Emperor, Justinian II. The homage of kissing the feet had been common to the Roman emperors, and was occasionally paid to our Saxon kings.

KITES. The paper-kites used by children have been known for many ages in China and India, and the flying of them is the chief amusement of those unfortunate princes who, by the custom of their country, are confined within the walls of the palace, lest they should be led away by designing men to acts of rebellion.

KNEELING at Prayers is a custom of great antiquity, being practised under the Old Testament Dispensation, and adopted by the primitive Christians, from the example of St. Stephen. By the Council at Nice, genuflexion was prohibited on Sundays, and from Easter to Whitsuntide.

KNIFE. The first mention of this instrument is in Genesis, where Abraham is represented as taking a knife to slay his son. The Romans used knives at their dinner, and introduced the custom into this country, at least, it was common among the Saxons.

Anderson states that the first making of knives in England was begun in the year 1563, by one Thomas Matthews, on Fleet Bridge in London. Montfaucon has a plate of a knife grinder's wheel resembling the modern, on which Cupid is sharpening his arrows.

KNIGHT. Knighthood was the first degree of honour in the ancient armies, and was usually conferred with a great deal of ceremony on those who had distinguished themselves by some notable exploit in arms : the origin of it is traced to the small body of three hundred horse, which constituted the cavalry of Romulus, and led to the foundation of the equestrian order that ranked immediately after the Senators ; but the order of Roman knights as distinct from the people, did not begin before the time of the Gracchi, when the distinction might be obtained by such who possessed a certain revenue, though not lineally descended from the ancient knights.

The word knight in its original German, *knecht*, signifies a servant, and in this sense is applicable to our *Knights of the Shire*, who properly serve in parliament for such a county. In the Continental languages the Knight is styled *Equites*, which properly signifies a horseman, but in our country miles, because he was obliged to serve the King as a soldier in his wars, or pay a sum of money for a substitute.

The exertion of this prerogative of creating knights, as an expedient to raise money in the reign of Charles I., gave great offence ; though warranted by law, and the recent example of Queen Elizabeth, and therefore in the sixteenth year of that King's reign it was abolished ; since which this kind of knighthood has fallen into great disregard.

KNITTING. The method of fabricating cloth by the ingenious entwining of a single thread, called knitting, is first noticed about the commencement of the sixteenth century, and according to some, originated in Scotland, from whence it found its way into France, where a company of stocking-knitters was established in 1527, under the patronage of St. Fiacre, a Scottish recluse of the seventh century. In the year 1530, the word knit, applied to stockings, must have been common in England, as at that time a grammar was published by the French master to the Princess Mary, daughter of Henry VIII., in which the verb to knot or knitt is mentioned, "I knitt bonnets or hosen—je lasse : " and from an authentic and curious household book, kept during the life of Sir Thomas L'Estrange, knight, are the following entries, " 1533, 7th Sept. Peyd for 4 peyr of knytt hose, viiis. ; 1538, 3d Oct. Peyd for 2 peyr of knytt hose 1s. ; " the former being for Sir Thomas himself, and the latter for his children. It is therefore presumed that, at this period, knit stockings were pretty common in England, though woollen hose were generally worn till the middle of Elizabeth's reign.

It is related by Stowe, that in 1564, William Rider, an apprentice of Master Thomas Burdett, having accidentally seen in the shop of an Italian merchant a pair of knit *worsted* stockings, procured from Mantua, made a pair exactly like them, which he presented to William, Earl of Pembroke, and that these were the first stockings knit in England of woollen yarn, which in the course of a few years became common, for when Queen Elizabeth was at Norwich in 1579, several female children appeared before her, some of whom were spinning *worsted* yarn, and others knitting *worsted* yarn hose.

From the circumstance of Henry VIII. having received, in 1530, knit silk stockings from Spain, it is by many supposed that the art of knitting had its origin in that country.

KNOCKERS to the outward door are noticed by **Plautus** and **Plutarch**; the latter says it was a mark of great rudeness to enter the house without first knocking at the door.

LACE. The most ancient kind of lace is that worked by *the needle*, many specimens of which are to be found among old church furniture, being the work of nuns or the offering of ladies of fortune to the church, but the time of its introduction is unknown.

The invention of *knitting* of lace is attributed to Barbara, the wife of Christopher Huttman, a German miner, in 1560, about which period the mines being unproductive, the women employed themselves in the making of veils, and the lace which they manufactured, on account of the low price of labour, soon became fashionable, and superseded the Italian lace worked with the needle. A manufacture of lace was established by Colbert, in France, in 1566. Flanders also has long been celebrated for its lace; an ounce of fine Flanders thread has been sold in London for £4, which might be made into lace of the value of £40, or of ten times its weight in gold.

In 1635, Charles I. prohibited the importation of foreign purles, cat-works, or bone-laces, or of any commodity laced or edged therewith, at the request of the makers of these goods, in and near London and other parts of the realm, who, from the importation of these foreign wares, had been reduced to great want and necessity.

After embroidery with the needle, the lace was formerly called *point*. Bone-lace was a kind of *thread-lace*, and received its name from the bobbins being made of bone.

Gold and silver lace, or rather wire, is noticed under the article embroidery ; as a military ornament, it was worn by the Romans in the fourth century ; gold threads on pipes or rolls for needle work, ~~are~~ noticed in the fourteenth century ; Beckman says, that the silver wire spun round silk was first manufactured in Italy, and brought to Germany in 1592.

LACMUS, or Litmus, a preparation of Argol, invented by the Dutch about the year 1700, and forming a valuable test to the chemist, in detecting the presence of uncombined acids, which immediately changing the natural blue pigment to red.

LADDER. In Jacob's vision the angels are described as ascending and descending by means of a *ladder*. The Greeks attribute the invention of it to Capaneus ; most probably the first ladders were constructed for military purposes, and are of European invention ; they are little used either in Asia or Africa ; notched poles, similar to those attached to our ancient beacons, being employed in their stead.

LAMP. Polydore Virgil ascribes the invention of lamps to the Egyptians ; Homer makes no mention of them ; the Greeks and Romans had them of various forms and excellent workmanship ; the use of lighted lamps in sepulchres and churches is of great antiquity.

The common or Argand lamp is so named from its inventor, a native of Switzerland, and was brought into use about 1786. A fine wire lamp, for preventing explosion by fire-damp, in coal mines, was invented by Sir Humphrey Davy, in 1815.

The manufacture of *lamp black* is noticed by Pliny.

LANCE. The lance, or spear, is among the oldest weapons recorded in history, and is nearly coeval with the sword or bow ; it probably originated in a pole or stake, sharpened

at one or both ends, afterwards armed with a head of flint, and in process of time, on the discovery and use of metals, with copper, brass, and iron. Long spears and lances are supposed to be of Spanish origin, they were the common weapon of the Norman cavalry, who in charging rested the butt-end of the lance against the arçon, or bow of their saddle; they were also occasionally used on foot. Tilting lances differed little from those used in war, being made blunt, or having a cap at the point, and were used about the commencement of the fourteenth century. Lances were ornamented with a bandarole near the point, as is still the case in the regiments of Lancers.

LANGUAGE. It is generally supposed that the primitive language was formed by God himself, and supernaturally communicated to Adam—most of the Jews adopt this opinion; and some of them apprehend that this was done by acquainting him in general with the roots and fundamental parts of the tongue only; but others imagine that the Creator revealed to him the whole extent and propriety of the language—thus, Oukalos paraphrases the words which we render, “*Man was made a living soul*”—“*Man was made a speaking animal.*” Many have carried this opinion so far as not only to think that Adam had a particular language as innate to him, (as a power of thinking or of reasoning,) but that all his descendants have it too, and that they would of themselves speak this language. Plato also seems to maintain that the first language was of divine formation, for he supposes that the names of things had originally some natural connexion or congruity with the things themselves, and that the first names must have been justly imposed, because they were imposed by the Gods: but there is another opinion, which seems more reasonable in itself and more consonant to the Mosaic history, viz: that speech was the immediate gift of God to the first man—not that God really inspired

him with any distinct or primitive language, but that he made him sensible of the power with which he was endued, of forming articulate sounds, and the use he might make of them as signs of his ideas, leaving the arbitrary imposition of them to Adam himself—so that speech was attained by gradual invention of arbitrary sounds, to denote first the most obvious things, and afterwards the less obvious, as they occurred. However, though it does not seem impossible that mankind might of themselves, in process of time, form a perfect language; yet it is not easily conceivable that Adam could attain the use of speech so soon as is represented to us by Moses, without divine assistance.

Diodorus Siculus and Vitruvius assert that the first men lived in caves like beasts, uttering only confused and inarticulate sounds; till associating for mutual assistance, they came by degrees to use articulate sounds, mutually agreed upon by the arbitrary signs or marks of those ideas in the mind of the speaker, which he wanted to communicate to the hearer; and James Burnet (generally known under the title of Lord Monboddo) in his work entitled "*The Origin and Progress of Language*," published in 1773, affirms that the human race have actually risen from the very lowest stage—that of mere brutality: he supposes, on the authority of several travellers whom he quotes, that there were nations without laws, or any of the arts of civilized life—without even language; and that some of them, to complete their relationship to the monkey tribe, had actually tails.

The diversity of languages takes its rise from the confusion of tongues at the building of the tower of Babel about 2250 B. C. : for at that time it is expressly stated that "All the earth was of one language and of one speech."

The point of antiquity and priority among languages has been extremely controverted. Herodotus tells us that in the dispute between the Egyptians and Phrygians about the antiquity of their languages, Psammeticus, King of Egypt,

ordered two children to be brought up, with express prohibition not to have one word pronounced before them, but to leave Nature to speak of herself, and the first word they spoke happened to be "beecos," which in the Phrygian language signifies, *bread*. The Arabs dispute the point of antiquity with the Hebrews; but the Jews positively insist that the Hebrew tongue, such as it is found in the Holy Scriptures, is the primitive language, and that spoken by the first man; and several Christian writers, as Chrysostom, Austin, Origen and Jerome, among the ancients; and Bochart, Selden and Buxtorf, among the moderns, agree with the Jews in maintaining the antiquity of the Hebrew language.

The pretensions of the Chinese to the superior antiquity of their language has met with many supporters: besides it is urged that the Chinese are the posterity of Noah, and that Fohi, the first King of China, was Noah himself.

In a work lately published by Adeling, a Russian, entitled "A View of all the known Languages and other Dialects in the World," it is stated that there are 937 Asiatic languages, 587 European, 276 African, and 1264 American, making in all 3064 different languages.

LANTERNS. It has been erroneously supposed that lanterns of horn were invented by our King Alfred, for, according to Pliny, they were in common use among the Romans and ancient Greeks, being made of the horn of the wild bull, cut into thin laminæ. The Romans had them also made of bladders and oiled paper, and, under the Emperors, of glass; and from a poem attributed to Bishop Aldhelm, wherein is the following line—

Nec lanternæ tibi vilescant vitæ, virgo,

it would seem that lanterns of glass were also known in this country in the eighth century, and were probably brought from Rome.

Epictetus's lantern is said to have been sold for three thou-

sand drachmas ; that of Diogenes was held in great estimation among the ancients.

The Roman dark lanterns had four sides, three of which were black and only one transparent.

The great ship lantern hanging before the poop appears on the Trajan column.

The magic lantern was invented by Roger Bacon.

LAPIDARY. The art of cutting precious stones is too ancient to be satisfactorily traced ; the Israelites most probably borrowed it from the Egyptians. Natter says the ancients employed the same kind of instruments for this purpose, as those used by the moderns, and that they had a wheel which moved in a horizontal direction above the work table, or that instrument generally known as the lapidary's wheel.

LATH. Slips of wood, used in plastering, are noticed by Pliny.

LATHE. This useful engine, for forming wood or metal into any article of a circular figure, according to Diodorus Siculus, was invented by Talus, the grandson of Dædalus. Pliny, however, ascribes the invention to Theodore of Samos, who flourished about 740 B.C. ; and mentions one Thericles, who rendered himself very famous by his dexterity in managing it. With this instrument the ancients turned all sorts and kinds of vases, many of which they enriched with figures and ornaments in basso relievo. Cicero calls the workmen who used it *vascularii*.

LATITUDE. Long before the apparent motion of the heavens was known to arise from the real motion of the earth, the two points which we now call the poles, were referred to those two points in the heavens which were observed to be stationary : and a great circle of the terrestrial sphere, sup-

posed to be every where equally distant from the poles, was called the equinoctial line, and assumed as a principal circle, to which geographical situations were to be referred : and as astronomers, in taking the *ecliptic*, or regular course of the sun, for their principal circle, had defined the positions of the heavenly bodies by their distances from this circle, and a perpendicular to it, calling those distances *longitudes* and *latitudes* ; so in imitation of this method, geographers assumed the equinoctial line as their standard, and taking another circle perpendicular to it, they referred all positions on the earth to those circles, by the same names of longitude and latitude. Hence longitude and latitude in geography are not defined in the same terms as in astronomy, being in the latter always referred to the ecliptic, and in the former to the equator ; but the right ascension and declination of a heavenly body being deduced from the equator and perpendiculars thereto, is exactly similar to the longitude and latitude of any place delineated on the terrestrial globe.

The Egyptians at a very early period calculated the altitude of the sun by comparing the height of a gnomon or pillar erected on a horizontal plane, with the length of its shadow ; for these two sides being known, and the included angle a right one, the remaining side and angles were easily deduced, and the angle opposite the pyramid would be the angle of elevation ;—further, by frequently observing the exact time when the shadow of the gnomon was shortest, a line would have been established, which would shew the passage of the sun or any other celestial body over the meridian, at which time it is at its greatest altitude—the meridian altitude therefore of the polar star, deducting as much from the pillar as would be equal in height to the eye of the observer, would at once give the latitude of the place of observation ; and according to Ptolemy, Hipparchus, who flourished about 150 B. C., was the first person who by this means ascertained the latitude of a place on our globe.

The Alexandrians were also acquainted with the method of deducing the latitude from the sun's meridian altitude—for by close observations of the length of the shadow of the gnomon when the sun was on the meridian, the solstitial points were discovered, and the sun's course, from one point to the other, or its daily declination from the equator, would be ascertained, which being added to or subtracted from the meridian altitude, would give the latitude required.

It is said that Eratosthenes of Alexandria, the successor of Aristarchus, about the year 200 B. C., determined the latitude of Syenne in Egypt to be about $23^{\circ} 30'$, by observing that a deep well received the vertical rays of the sun on the day of the summer solstice, without any perceptible shadow.

The ancient obelisks found in Egypt and the east were probably used for astronomical purposes; and it is to the erection of gnomons in Italy, France, and other parts of Europe, till the commencement of the seventeenth century, that we owe the foundation of all our astronomical knowledge: but as practical astronomy advanced to accuracy and perfection, the shadow of the gnomon was found to be generally ill defined, so that unless it was of a very considerable height, the angle of elevation would not be sufficiently ascertained to insure an accurate result—to remedy this inconvenience, graduated instruments, called quadrants, were invented, which marked the elevation of the object by means of a plumb line; and afterwards double mirrors were added to the instrument, by means of which the image of the celestial object was brought to the horizon, and its altitude more correctly determined. (*See Quadrant.*)

LAUREAT. Though the origin of the institution of Poet Laureat in the King's Household cannot be ascertained, yet, as Sir John Hawkins observes, there are many ancient records which notice it. In the reign of Henry III. there was a court poet, named Henry de Avranches, who is sup-

posed to have had an appointment of a hundred shillings a year, by way of salary or stipend. Chaucer was Poet Laureat to Richard II., and the first who obtained the grant of an annual allowance of wine. We read of persons under the same title in the reign of Edward IV., Henry VII. and VIII., and of James I., who in 1615, granted to his Laureat an annual pension of 100 marks. In the year 1630, this pension was augmented, by letters patent of Charles I., to £100 a year, with an additional grant of one terse of Canary wine, to be taken out of the King's store of wines yearly.

LEAD. At a very early period plates of lead were made use of, for the purpose of transmitting to posterity such maxims and regulations as were deemed worthy of preservation. Leaden pipes for the conveyance of water, and the method of soldering them with tin, as also fixing iron in stone by melted lead, is noticed by Vitruvius. Leaden gutters, and wooden roofs covered with sheets of lead, were common in the middle ages.

Sugar of lead, or litharge, is noticed by Dioscorides and others; Peracelsus, who died in 1541, recommended it as salutary in several disorders. The adulteration of wine by litharge, is said to have originated in France, and is prohibited in a French ordinance of 1696.

LEAF. Agostens Manderola, an Italian monk, first attempted to produce trees merely from the leaf, an account of which he gives in his book on gardening, published in 1652; wherein he states that he had produced trees from the leaves of the cedar and lemon tree; this method was afterwards practised with success, by Baron Munchausen, at Swobber, on the Limon a Rivo and other plants.

The art of reducing leaves to skeletons by freeing them of their soft and pulpy substance, in such a manner as to leave only their internal and harder vessels, was first attempt-

ed by Severinus, a Neapolitan, in 1645, and was revived by Gabriel Clauder in 1685.

LEAP-YEAR. (*See Bissextile.*)

LEATHER. The first garments in use among mankind were confessedly made of the skins of animals, and leather certainly constituted several parts of the dress, even after the clothing arts were carried to the greatest degree of perfection—thus the shoes and girdles are early noticed as being made of leather; and we read that the outer coverings of the tabernacle were made of ram's skins and the skins of badgers, which, from the circumstance of the former being dyed red, as related by Moses, will naturally lead one to conclude that they must have been properly prepared previous to that operation.

It is difficult however to fix the time at which the art of *tanning* was introduced; most probably it originated from some accidental discovery, as the astringent matter, which converts the skin into leather, abounds in many vegetables that are the production of every climate: independent however of vegetables, many earthy and metallic substances have the property of rendering skins to a certain extent incorruptible; and some mineral waters containing copper or iron, will produce the same effect—hence we may conclude that some method of giving preservation to the skins of animals must have been known at a very early period in the eastern nations, though the Romans were long unacquainted with it: Du Cange mentions bark as being employed for this purpose: but the art was not reduced to any scientific principles, till investigated by Sir Humphrey Davy in the close of the last century.

LEEK. The custom of wearing leeks on St. David's day originated from a victory gained by Cadwallo over the Saxons,

on the first of March, A. D. 640, in which battle the Welshmen, in order to distinguish each other, wore leeks in their hats.

LEGATE. During the Government of the Saxon and Danish kings, we rarely find any instance of the Pope sending a legate to this country. In those days the Archbishop of Canterbury, as Primate of the Church of England, was considered as the natural legate of the Popes, and generally entrusted by them with the execution of their orders; but as these frequently acted more for the interest of their own church than that of Rome, the Pope in the time of Offa, King of Mercia, sent a legate of his own to England, who, in opposition to the interests of the Archbishop of Canterbury, formed for a short period a new Archbishopric at Litchfield. No other instance, however, is recorded of a second attempt till the reign of William the Conqueror, who being desirous of depriving Stigand, Archbishop of Canterbury, of his see, applied to the Pope for a legate to preside at a Council for that purpose, and thus a precedent was established, of which the Popes did not fail to avail themselves, of interfering with the civil as well as religious concerns of the kingdom. The first resident legate was Guido, Archbishop of Vienne, in the reign of Henry I.

LEGITIMATION. The right of legitimation was a thing unknown to princes till the time of Constantine, since which it has been generally acknowledged.

In the middle ages the method of rendering children legitimate that were born before marriage, was by holding a pall over them, as was done in Parliament when John of Gaunt's children were legitimated.

LENT. St. Jerome and St. Augustin affirm that this season of mortification and abstinence was instituted in the

time of the apostles ; others, however, date its origin to an ordinance of Telisphorus, Bishop of Rome, in the second century. Formerly it consisted of only thirty-six days ; but in the ninth century, to come somewhat nearer to the miraculous fast of our Saviour, several of the heads of monasteries took upon them to add four days more, which in the course of time was generally adopted.

Ash-Wednesday being the first day of Lent was in the primitive times observed with great strictness—the cakes were made of the branches of brushwood, palm or box-wood, which had been burnt and consecrated the preceding day ; with these the priest marked each person on the forehead with the sign of the cross, with this admonition :—“ Remember that dust thou art, and to dust thou must return.”

In the cathedral church at Salisbury is the tomb of a person, who is said to have fasted thirty-eight days, and died on the thirty-ninth !

LIBRARY. Some authors refer the origin of libraries to the Hebrews, and observe that the care they took for the preservation of their sacred books, and the memory of what concerned the actions of their ancestors, became an example to other nations, particularly the Egyptians. Mention is made in the second Book of Esdras, of Nehemiah building a place for the reception of the Books of the Prophets and of David, and the Records of the Kings of Israel. Pisistratus erected a library at Athens : but the most celebrated one among the ancients was that founded by Ptolemy Soter, at Alexandria, which, at the time of Cæsar, consisted of 700,000 volumes : this collection was destroyed by the Saracens, A. D. 642—the Caliph observing that if the writings of the Greeks agreed with the Koran or Book of God, they were useless and need not be preserved ; and if they disagreed, they were pernicious and ought to be destroyed. At present the

most extensive libraries are to be found in the Universities in Germany—that of Munich contains 400,000 books.

The first *circulating library* was opened in the year 1740, by Batho, No. 13, Strand, (one of the houses taken down to form the approach to Waterloo bridge.)

LIGHT-HOUSE. (*See Beacon.*)

LIGHTING OF STREETS. Lamps were suspended near the baths and public buildings of ancient Rome; and although the Romans considered the use of flambeaux and lanterns necessary in returning home, yet it is not improbable that the streets were also provided with lamps, as was the case, according to St. Jerome, with the streets of Antioch.

Lights were ordered to be exhibited in the streets of London in 1414, to prevent riots and robbery; and in 1688 the inhabitants of London were directed to hang out lanterns duly *at the accustomed time*. In 1716 it was enacted that all those whose houses fronted any street should hang out one or more lights, which were to burn from six to eleven. In 1736 an Act of Parliament was passed for the regular lighting of the streets; and a general estimate was made of the expense of introducing small globular lamps into the city for that purpose, when it was calculated that the number required would be about 4,300 for the streets alone, and the cost would be £8,610 per annum. Lighting with gas commenced in 1816.

By an edict passed in 1524 the inhabitants of Paris were directed to expose a light from each house after nine at night. In 1558 falots were placed at the corners of the streets, which were afterwards changed for lanterns.

LINEN. Although it would be impossible to trace the period when linen, so called from its being made of the linum or flax, was distinguished from cotton cloth, yet there seems

to be but little doubt that it was first fabricated in the east, where flax is produced in considerable abundance, from whence it found its way into Europe about the period of the Roman republic. Pliny notices the Carpasian flax, which in his days was imported from Spain, as being remarkably fine and glossy; and during the middle ages the Carpasian linen was a common term for very fine linen; but till the commencement of the thirteenth century the word "linen" seems to be indiscriminately applied to either linen or cotton cloth.

The ancient Britons most probably procured their cloth from Gaul: the Romans made them acquainted with the cultivation of flax, and the method of manufacturing cloth. But woollen shirts were generally preferred by the Saxons and Normans; for the linen being of a rough and ordinary kind was adapted rather to the external than the internal part of the clothing, neither was it made in any great quantities, but generally imported from Venice or Flanders. Madox states that Henry III. directed the Sheriffs of Wilts and Sussex to buy for him, each out of his respective county, one thousand ells of fine linen, and to send it to his wardrobe at Westminster; yet in the time of Henry VI. we are informed that linen was so scarce that the queen had but two shifts of it; and even so late as James II. fine linen was very dear, and was imported from Flanders. The manufacture of linen in this country was not carried to any extent before the middle of the seventeenth century, nor brought to any degree of perfection till aided by the superior skill of the French protestant refugees, who sought an asylum in England, in consequence of the revocation of the edict of Nantes by Louis XIV. in 1685.

The unfortunate Earl of Strafford, while Governor of Ireland, laid the foundation of the linen manufacture in that country: observing that the soil was suited to the production of flax, he sent to Holland for the seed, and to France and

the Netherlands for skilful workmen ; he also, to encourage the undertaking, advanced a very considerable sum of his own fortune, and by his perseverance established the most important manufacture that Ireland ever possessed.

The filamentous parts of different vegetables have been employed in different countries, for the same mechanic uses as hemp and flax among us. In Madagascar different kinds of cloth are prepared from the filaments of the bark of certain trees, boiled in strong ley, and some of these cloths are very fine, and approach to the softness of silk ; the stalks of nettles are sometimes used for like purposes, even in France. In the Transactions of the Swedish Academy for 1750, we have an account of a strong kind of cloth being made of hop stalks.

LITANY. In the first ages of the church the litany was only used upon occasion of solemn processions, when the people walking barefoot made the responses with great devotion ; but by the Council of Toledo the litany was directed to be used every month throughout the year, and afterwards upon every Wednesday and Friday, to which our rubric has added Sunday.

Before the last review of the Common Prayer in 1661 the litany was a distinct service by itself, and used some time after the morning prayer was over.

LITHOGRAPHY. (*See Engraving.*)

LITHOTOMY. The art of cutting for the stone is as ancient as the time of Hippocrates.

LITTER. This kind of carriage, similar to the Asiatic Palenqueen, was common to the Romans under the name of Lectica. Though no mention is made of it in our history as being carried by men, yet horse litters for the convenience of

travelling were frequent during the Norman period, and even so late as the time of Elizabeth.

LITURGY. (*See Common Prayer.*)

LIVERIES for servants and dependents are first noticed under the Roman Emperors. The royal liveries of England were under the Plantagenets, white and red—the house of Lancaster, white and blue—of York, murrey and blue—of Tudor, white and green—of the Stuarts, yellow and red—and of Hanover, scarlet and blue

Formerly the Barons, with the view of implicating their dependents in their quarrels, made them assume a kind of livery, but this was prohibited by Richard II.

LOGARITHMS. A series of artificial numbers, invented by John Napier, Baron of Murchiston, in Scotland, in 1616.

LONGEVITY. Immediately after the creation, when the world was to be peopled by one man and woman, the ordinary period of life was nine hundred years and upwards, but none of the Patriarchs after the Flood, except Shem, reached the age of five hundred years. In the second generation, none exceeded two hundred and forty; and in the third generation, two hundred years. As population increased, longevity became more rare, and at length seventy or eighty years was considered as the probable duration of human life, and to this extent it has generally been estimated from the time of Moses to the present day.

There are however many instances in modern times of people living to an extraordinary great age. Abstinence has been found extremely beneficial in prolonging life—the noble Venetian, Cornero, who was in so delicate a state of health at the age of forty that his life was despaired of, recovered, and lived to near 100, by the mere effect of abstinence; and

the primitive christians of the East, who retired from the persecutions of the Romans into the deserts of Arabia and Egypt, are represented as being healthful and cheerful, with; as Cassian informs, only bread and water for their food. With this frugal fare St. Anthony reached the age of 105 years; James the Hermit, 104; Arsenus, the tutor of the Emperor Arcadius, 120; St. Epethonius, 115; Simeon the Stylote, 112; and Renauld, 120. Others by temperance and labour have in our own and other countries, arrived at a still greater age, and even to exceed that of Terah in the third generation after the flood, as the following list of persons of 110 years of age and upwards, will testify.

NAMES.	AGE.	REMARKS.
John Stewart	111	of Aberfeldie, Perthshire, died 1804.
Thomas Warden,	111	Epping.
Elizabeth Williams,	111	Devon.
John North,	111	Yorkshire.
Thomas Robinson	111	Newcastle.
Ann Pickup,	111	Lancashire.
James Congham,	112	Mayo.
James Beaty,	112	Meath.
James Healy,	112	Cheshire, Middlewich, died March, 1781.
James Sager,	112	Lancashire, 1668. <i>Phil. Trans.</i> III.
Ann Harris,	113	Cornwall.
Mary Harris,	113	Falmouth.
Ann Taylor,	114	Worcester.
Isabella Sharpe,	114	Gateshead.
Robert Blakeney, Esq.	114	Armagh.
Patrick Ryan,	115	Lisbury, Northumberland.
James Ramsey,	115	Collercoates.
A French Soldier,	115	Living. <i>Gent. Mag.</i> Sep. 1822.
Belinda Crawford,	115	Galway.
Charles Haveram,	115	Ireland.
Elizabeth Burnet,	116	Ireland.

NAMES.	AGE.	REMARKS.
William Ruthven,	116	Scotland.
John Wilson,	116	Suffolk.
Elizabeth Freer,	116	Wigston Poor House.
Alice, a slave girl,	116	Pennsylvania.
Cornelius Madigan,	117	Clare.
Mrs. Sands,	120	Staffordshire. <i>Fuller's Worthies.</i>
William Postell,	120	France. <i>Bacon's Hist.</i>
Sarah Malcomsome	121	Drumgerlin.
Francis Bons,	121	France.
A poor woman,	123	Belfast.
Robert Parre,	124	Salop. His father died at the age of 109, and his grandfather 113; his great-grandfather was the celebrated Thomas Parre, who died at the age of 152.
Mrs. Bowles,	124	April, 1719.
Margaret Sect,	125	See her tombstone, Dalkeith, Scotland.
John Trice,	125	Worcester. <i>Daily Adv.</i> March 1774.
Martha Hannah,	126	Ireland.
Robt. Montgomery,	126	Yorkshire.
John Beyles,	126	Northampton, April 1706. See Inscription in the portico of All Saints.
John Scrimshaw,	127	Dec. 6, 1711.
Mary Innes,	127	Glasnakelly Sky.
Mary Yates,	128	Shropshire.
Mary Meigham,	129	Donoughmore.
David Cameron,	130	1795.
John de la Samol,	130	1766.
George King,	130	1766.
John Taylor,	130	1767.
William Beattie,	130	1774.
William Watson,	130	1778.

NAMES.	AGE.	REMARKS.
Robert Macbridge,	130	1760.
William Ellis,	130	Liverpool, Aug. 16, 1780.
Elizabeth Taylor,	131	1764.
Elizabeth Merchant,	133	1761.
Richard Lloyd,	133	<i>Lynche's Guide to Health.</i>
Mrs. Keith,	134	1772.
Francis Agna,	134	1777.
James Brockey,	134	Devonshire ; living 1777. <i>Daily Adv.</i> Nov. 18.
Catharine Lopez,	134	Kingston, Jamaica, 1806.
James Harrison,	135	1744.
Evan Williams,	135	Carmarthen Work-house, 1782.
James Shele,	136	1759.
Catharine Noon,	136	1768.
Margaret Forster,	136	Cumberland ; living in 1771, and her daughter aged 104.
John Mount,	136	Scotland, 1776. <i>Morning Post</i> , Feb. 29th.
John Richardson,	137	1772.
— Robertson,	137	1793.
Lucas Tultulla,	137	<i>Fulgosus, Lib. VIII.</i>
William Sharpley,	138	1757.
John Macdonough,	138	1768.
— Fairbrother,	138	1770.
Mrs. Clumb,	138	1722.
Margaret Patten,	138	<i>Lynche's Guide to Health.</i>
Thomas Dobson,	139	1766.
Dumitor Raduly,	140	Transylvanai, 1782. <i>Gen. Gazetteer.</i>
Galen, the Physician,	140	Pergamus.
Michael Lawrence,	140	<i>Buchanan's Hist. of Scotland.</i>
William Leyland,	140	1752.
Countess of Desmond,	140	Ireland. <i>Rawleigh's Hist.</i>
A. Goldsmith,	140	<i>Daily Adv.</i> June 24, 1776.
James Sands,	140	Staffordshire. <i>Fuller's Worthies</i> ; his

NAMES,	AGE.	REMARKS.
		wife died at the age of 120.
Pulo Timan,	140	A Surgeon at the village of Vander- mont, in Lorrain; the day before his death he performed, with a steady hand, and with profes- sional dexterity, the operation of cutting for the Cancer. <i>Paris</i> <i>Paper</i> , Oct. 25, 1825.
Simon Sack,	141	Trionia, May 30, 1764.
Abraham Paiba,	142	Charlestown, South Carolina. <i>Gen.</i> <i>Gazetteer</i> .
Swarling, a monk,	142	1773.
Countess of Eccliston	143	Ireland. <i>Fuller's Worthies</i> .
Charles M. Finday,	143	1773.
John Effingham,	144	1757.
Evan Williams,	145	1782.
Col. Thos. Winslow,	146	Ireland, Aug. 26, 1766.
Chris. Drakenburgh,	146	Norway. <i>Ann. Reg.</i> 1770.
St. David,	146	Cornwall. <i>Rapin's England</i> .
William Mead,	148	1652.
Album Marc,	150	Ethiopia. <i>Hakewell's Appendix</i> .
Francis Consist,	150	Yorkshire, Jan. 1768.
Titus Fullonius,	150	Bononia. <i>Fulgosus, Lib. VIII</i> .
Thomas Newman,	152	1542.
James Bowles,	152	Warwickshire, Killingsworth, Aug. 15, 1656
Thomas Parre,	152	Shropshire, Nov. 16, 1635. <i>Phil.</i> <i>Trans.</i> ; at the age of 120 he married his second wife and had a son by her.
Thomas Danme,	154	1648.
A Polish Peasant,	157	1702.
Joseph Surrington,	160	1796.
William Edwards,	168	1668.

Name unknown, 168 The last annual obituary published at Petersburg records the death of this person, who resided near Polatsk, on the frontier of Livonia. He had seen seven sovereigns on the throne of Russia; and remembered the death of Gustavus Adolphus: he had been a soldier in the thirty years' war; and at the battle of Pultowa in 1709 he was fifty-one years of age; at the age of ninety-three he married his third wife, with whom he lived fifty years.

The two youngest sons of this marriage were eighty-six and sixty-two, respectively, in the year 1796; the eldest of his other sons in the same year were ninety-five and ninety-two, respectively. The entire family of this patriarch comprises one hundred and thirty-eight descendants, who all lived together in the village of Polytyka, which the Empress Catherine the Second caused to be built for them, granting at the same time a considerable tract of land for their support. In the one hundred and sixty-third year of his age, this modern Nestor was in the enjoyment of the most robust health. *Times Newspaper*, Dec. 30, 1836.

- Henry Jenkins,** 169 Yorkshire ; he was born twelve years before the battle of Flodden Field, which he perfectly remembered, and died at Ellerton-upon-Swale, December 8, 1670. *Phil. Trans., Gent. Mag.* 1822.
- Louise Truxo, a slave,** 175 Tucuman, South America, living in 1780. See *London Chron.* Oct. 5.
- A Mulatto Man,** 180 North America ; died in Frederick-town, 1797.
- Ctztartan Petrarch,** 185 Mentioned in a letter from Hamel Brenix, the Dutch Envoy at Vienna, to the States-General, dated Jan. 29, 1724.
- Thomas Carn,** 207 London. According to the Parish Register of St. Leonard, Shore-ditch, died 28th Jan. 1588. See *County Chronicle*, Dec. 13, 1791.

LONGITUDE. It may be necessary to premise that in taking the longitude of a place, there must be a certain known position or meridian to which the place of observation refers, and which must have been ascertained by the *same course of calculation*—this is effected either by the observations being made on the same day at both places, marking the difference in time, or by a reference to an astronomical Ephemeris, in which the celestial phenomena are calculated for a known meridian, and the difference in time of the observation of the same phenomena in a distant part of the globe, gives the longitude in hours and minutes, being to the east of the known meridian, if occurring sooner than the time there mentioned ; and to the west, if later.

Hence we may infer that, although, as already noticed, the ancients had a very accurate method of determining the

latitude of any place on the earth by means of the gnomon, they had no mode of ascertaining their longitude by celestial observations, as we read of no Ephemerides in those days, nor had they indeed the requisite instruments for that purpose, and therefore were reduced to the more simple expedient of admeasurement, which, without the assistance of a compass, must have been faulty in the extreme: eclipses of the sun and moon were indeed recorded at a very early period, and Thales is even said to have predicted them; but it is absurd to suppose that the ancients were capable of deducing the longitude by this method. The coasts of the Mediterranean, which might be presumed as well known to the Romans, were very inaccurately described by them: the difference of longitude between Alexandria and Issus, the present Scandaroon, and Gibraltar, according to Ptolemy, being sixty-two degrees, whereas the real difference is only about forty-one and a-half, making a geographical error in that distance of about twelve hundred miles.

In the sixteenth century the eclipses of the sun and moon were strongly recommended, as a means of discovering the longitude; and it was by a lunar eclipse that M. de Peirisk in 1635 ascertained the difference of longitude between Marseilles and Aleppo to be only thirty instead of forty-five degrees: the ablest astronomers however soon found that no clear deduction could be made of the longitude of any one place to any sufficient degree of exactness by these eclipses, which are frequently obscured at the time of observation, neither did they happen sufficiently often to be of any great utility—hence several eminent astronomers, among whom was Ricciolus, who had collected the observations of no less than fifty-six eclipses of the sun and moon, between the years 1560 and 1658, gave up the correction of geography by the application of eclipses of the sun and moon alone, as a fruitless and desperate undertaking: at length, about the middle of the seventeenth century, John Dominic Cassini, Professor

of Astronomy at Bologna, suggested the expedient of having recourse to the *eclipses of Jupiter's satellites* (which had been discovered by Gallileo in 1610) for the purpose of ascertaining the longitude, and he therefore with much labour settled with accuracy their periodic revolutions, which he published in 1666, and in the years 1671 and 1672 had an opportunity of applying his theory to the rectifying of geography, in conjunction with M. Picard, who at the observatory of Tycho Brahe at Uraniburgh took the exact times of two immersions and three emersions of the first satellite of Jupiter, which were afterwards compared with the same phenomena as observed by M. Cassini at the observatory at Paris. This first experiment gave at once the difference of longitude in the clearest manner, and likewise afforded the certain prospect of rectifying the whole extent of geography as to longitude, upon principles that were self-evident, and not liable to any mistake whatever : in consequence of this success M. Picard and M. de la Hire were immediately employed in correcting the map of France, in doing which they were obliged to contract it every where within less boundaries than it was supposed, according to their former maps, to have occupied, insomuch that Louis XIV. jocosely observed that he found by their journey he had suffered a loss of half his kingdom.

However accurately the longitude of places might be taken by these means *on land*, the motion of a vessel rendered them impracticable *at sea*, and the early navigators had no means of estimating their longitude but by the computed run of the ship, ascertained by a log line, first used in 1570; and the dangers they incurred by this inaccurate method were sufficient to convince every enlightened Government, particularly of maritime states, of the importance of encouraging, to the utmost effort of human ingenuity, what could be directed to the improvement of this defective state of navigation, and it became the general opinion of astronomers

that the moon's motion was the most promising phenomenon to select ; though long after the idea was suggested, neither lunar tables nor instruments were sufficiently exact to render any method founded on this theory practically useful.

The first person who suggested a mode of discovering the longitude from observing the distance between the moon and some star or the sun, was John Werner of Nuremberg, who printed his annotations on the first book of Ptolemy's Geography in 1514, and his plan was recommended by Gemma Frisius in 1530 ; Kepler in 1630 ; and more particularly by John Morin, Professor of Mathematics, in Paris, in 1635, who reduced the theory to practice, and procured from Cardinal Mazarine a pension of two thousand livres : those however who attempted to practise his method, had to struggle with great difficulties ; and the requisite calculations were so formidable that none but astronomers, or at least very able calculators, could possibly attempt them : at length, from the very considerable improvements made by Sir Isaac Newton in the theory of the moon, in which he was followed by Euler, Hailey, and others, a set of lunar tables were calculated by Mayer in 1760, which, in connection with the improved state of mathematical instruments, has so greatly facilitated the operation, that it has now become the general and most correct method of ascertaining the longitude at sea ; and calculations which could not be performed by the most expert mathematicians in less than four hours, can now be effected in ten minutes.

Clocks were applied to the purposes of astronomy so early as 1484, and the first person who proposed to ascertain the relative longitude of any place or ship at sea, by means of an horological machine for indicating the time of the first meridian, was Gemma Frisius, about the year 1530.

This method was also described and recommended in Carpenter's Geography, published in 1635 ; but the imperfect state of horological machines at that time, prevented his

accomplishing the design; the idea, however, once suggested, was valuable, and stimulated ingenious mechanists in times succeeding, to attempt the accomplishment of an object of such national importance. The discovery of the isochronism of the pendulum turned the minds of ingenious men to the improvement of clocks: and we find that Lord Kincartine tried a marine pendulum clock, constructed by Dr. Hook, in the year 1662; and that Christian Huygens, the celebrated Dutch mathematician and mechanician, contrived a time keeper, actuated by a spring, and regulated by a pendulum, which was tried at sea by Major Holmes, in the year 1664, and spoken of by him in favourable terms.

The pendulum, however, was not only unsteady in its action during the tossing of a ship, but subject to a variation in its length by change of temperature, and therefore the balance which had preceded the pendulum was again resorted to, as a regulator of portable time-keepers; and though it was found incompetent to its office in a detached state, yet by the aid of a slender spring to quicken and regulate its vibrations, it has ultimately turned out to be of eminent utility. The introduction of this spring, which is also called the pendulum spring, from its possessing the isochronal property of the pendulum, is attributed by F. Berthoud to Hooke, who applied it first in a straight form, which Huygens soon afterwards changed to a spiral form, as being more favourable to isochronism. In the year 1763, Harrison considerably improved upon this balance or pendulum spring, by forming it of different metals, which by opposing each other, checked the alteration in its powers, which would otherwise arise from the change of climate, and thus first established a regular horological machine of such perfection, as to determine the difference of the longitudes of places with great accuracy, and for which he received the parliamentary reward of £10,000. Since his time many other improvements have been effected in time-keepers by Arnold, Mudge, Brockbank,

Jearnshaw and others; and chronometers are now brought to that perfection, that they are generally resorted to both at sea and land, as the readiest method of ascertaining the longitude, by comparing the apparent time of the place, as discovered by the mean of a series of observations of the sun's altitude, with the mean of the times indicated by the chronometer, reduced to apparent time: the difference (regard being had to the daily rate of going of the chronometer) giving the longitude of the place of observation.

The Spanish Government under Philip III. in 1598, first offered a reward for the best practical mode of discovering the longitude at sea; and this example was soon afterwards followed by the States of Holland, but not adopted by the British Parliament till 1714.

LOOKING-GLASSES. (*See Mirrors.*)

LORD. This title of honour, according to Camden, is of Saxon origin, being derived from *blaford*, afterwards written *toford*, which literally signifies a bread giver.

LOTTERIES. The Romans in the time of Augustus used to entertain their friends with lotteries; the tickets being all prizes were handed round in a vase, gratis. The Emperors also indulged themselves in this amusement; and we read of tickets entitling the holder to six slaves, and of others being only of the value of six flies.

The modern system of raising a fund by means of a lottery had its rise in Italy, in the fifteenth century, and was adopted by the French, in 1539. The first public lottery in England was raised for the purpose of repairing the roadsteads and harbours of the kingdom, and was drawn at the west door of St. Paul's cathedral, on the 11th of June, 1569, the tickets being two shillings each and no blanks. The following is a copy of the lottery scheme:—"A proposal for a very rich

lottery without any blanks, containing a great number of good prizes, as well of ready money as of plate and certain sorts of merchandize, having been valued and prized by commandment of the Queen's most Excellent Majesty's order, to the intent that such commodities as may chance to arise thereof, after the charges borne, may be converted towards the reparation of the havens and strength of the realm, and towards such other further good works; the number of lots shall be 40,000 and no more, and every lot shall be the sum of ten shillings sterling and no more, to be filled by the feast of St. Bartholomew. The shew of prizes are to be seen in Cheapside, at the sign of the Queen's Arms, at the house of Mr. Drick, goldsmith, servant to the Queen; printed by Henry Bynneman, 1567." The next lottery was in 1612, from which period they have been frequently introduced as a means of increasing the revenue; they were, however, suppressed in the time of Queen Anne, as injurious to the morals of her subjects; and this idea having been lately adopted by our Parliament, a law to prohibit the continuance of them was passed in 1826.

LUES VENEREA. This disorder was totally unknown to the ancients; and to the close of the fifteenth century we have no description of local appearances that can be mistaken for it; yet in the following century it had become so well known as to have employed the pen of at least a hundred authors. It is generally admitted that the disease was originally brought from Hispaniola in the West Indies by some of the followers of Columbus, and made its appearance in Europe in the year 1494 at Barcelona in Spain, when it soon spread through the whole city; but it does not appear to have attracted general attention till the following year, when it broke out with great virulence in the army of Charles VIII. of France, then besieging Naples. Caradinus Gilmus, in his "*Opusculum de Morbo Gallico*" says, "Last

year, (1496) a very violent disease attacked great numbers of people, both in Italy and on the other side of the mountains, which the Italians call the French disease, affirming that the French introduced it into Italy; while on the other hand, the French call it the Italian or Neapolitan disease, because, they say, they were first infected in Italy, and especially at Naples with this cruel plague; or because the disorder appeared first in Italy, at the time of the passage of the French over the mountains. And as this disease is yet unknown to the moderns, and there have been, and still subsist great debates about it among physicians, I have therefore determined to write something concerning it."

The practitioners of that period were indeed astonished at the novelty of the malady, and finding from experience, that the medicines usually given in analogous cases, proved ineffectual, were at a loss what method to pursue, and therefore resigned the complaint into the hands of quacks; fortunately at length the analogical application of mercury, which in the form of an ointment had been used by the Arabian physicians for the cure of cutaneous eruptions, was adopted by Berengarius of Corpi, about the year 1517, and afterwards mercury was recommended to be taken internally by John de Vigo, in 1530, and thus a method of removing the disorder was discovered, which has been generally practised to the present time.

LUTE. According to Vincenzo Galileo, this instrument was invented by the English, at least that the best lutes were procured from this country. Chaucer notices it in his *Pardoner's Tale*.

In Flanders whilom was a compaignie
Of yonge folk, that haunted on folie,
As hasard, riot, stewes and tavernes,
Whereas with harpes, lutes and giternes
They dance and plaie at dis bothe day and night.

In the reign of Charles playing on the lute began to be disused, from the supposition of its occasioning deformity.

MACE. The sceptre of the ancient kings was a common staff, on which they supported themselves; it afterwards assumed the form of a short club or mace, and was occasionally employed as a weapon of offence; the one belonging to Agamemnon was, for a long time, preserved by the Cherokees, and on occasions of public rejoicings honored with sacrifices, and introduced at the festive board; hence the mace has been considered as an appropriate emblem of authority for the worthy mayors of our corporate towns, who think a proper attention to good living necessary to enable them to sustain the fatigues of office.

The mace was the common military weapon of the Germans; it was brought into this country by the Saxons, and continued under various modifications till the time of Henry VIII. It appears to have been the principal weapon used by the clergy, who though compelled to give their personal aid in the defence of the realm, were prohibited by various canons of the church, from having recourse to the sword...

MACKEREL. The Romans were very partial to this fish, principally on account of the germin it afforded; it is noticed as common in the time of Edward III.

MADDER. This plant is supposed to be the Brouthanon of Dioscorides, and was used by the Greeks as a dye, and for medicinal purposes; its property of colouring the

bones of such animals as fed upon it, and even their wool with a deep red, is noticed by Lemnius in his treatise, *De Miraculis Occultis Naturæ*, written about the middle of the sixteenth century, and was discovered in this country by Belchier, a surgeon, in 1736.

MAGAZINE. The introduction of periodical publications may be considered as forming an epocha in the literary history of a country; a daily journal of occurrences, under the title of *Acta Diurna*, was at an early period published by the Romans, and directed to be exhibited at the Forum. About the commencement of the sixteenth century, articles of foreign and domestic intelligence occasionally made their appearance in Italy and other countries, and towards the close of it newspapers were regularly published in England: but the first attempt to establish a journal for the sole purpose of promoting the cultivation of literature, was undertaken by the French in 1665, and called the *Journal de Savans*, comprehending a review of the publications of the day, and principally intended for the amusement of those who were either too indolent, or had not sufficient leisure to peruse the works themselves.

In the year 1681, a periodical publication was commenced upon in this country, under the title of "The Monthly Recorder of all true occurrences, both Foreign and Domestic," and to which it appears to have been wholly confined. And on the 1st of January 1731, a miscellaneous pamphlet, containing, besides the usual political information, various detached pieces of literature, both in verse and prose, was printed monthly, under the denomination of the *Gentleman's Magazine*, and has been continued to the present day. The term Magazine was afterwards adopted for other publications of a similar description.

MAGNESIA. The white magnesia was formerly known

as the "Powder of the Court of Palma," and was sold in Italy towards the close of the seventeenth century, but the method of preparing it is generally thought to have been brought from Germany; and from its being considered as a sovereign remedy for all disorders, was kept a profound secret, till the mystery was dissolved by Basil Valentine.

MAGNET. The loadstone was known to the ancients under various names; by some it was called the Lapis Heraclius, from its being first discovered in a city of that name, in the country of Magnesia, (from which circumstance it probably derives its present name of magnet); and by Plato and Euripides the Herculean-stone, because from its *attractive* quality it had power even over iron, which was supposed to subdue every thing else.

We have no hypothesis that will satisfactorily account for the manner in which attraction, repulsion, and the other magnetic phenomena are produced, nor can the time when the attractive property of the magnet was first discovered be ascertained; but it appears from Plutarch that it was well known to the Egyptians and most of the ancient philosophers; and that Thales and Anaxagoras were so struck with it as to imagine that the magnet had a soul. Its *communicative* virtue was also known to the ancients, for Plato has described a chain of iron rings suspended by one another, the first of which was sustained by the loadstone; but the method of making *artificial magnets*, by impregnating an iron or steel bar with the magnetic virtue, so that it should possess all the properties of the natural loadstone, is a modern discovery, and was only reduced to any degree of perfection by Dr. Gowin Knight, in 1774. The *directive* power of the magnet, so important in navigation, whereby it disposes its poles along the meridian of every place, and occasions needles and pieces of iron touched with it to point nearly north and south, though probably known at a remote period,

cannot be traced further back than the twelfth century. (*See Compass.*)

The singular properties of the loadstone led to the supposition of its being endowed with extraordinary medicinal virtues. Galen recommended its being taken inwardly as an aperient; and plasters were made of it, which were said to extract iron, and even a knife from the human body; the chemists also declared that it yielded an oil of wonderful efficacy in innumerable disorders. Attius, who lived in the commencement of the sixth century, asserts that by merely holding the magnet in the hand it would drive away the gout; Marcellus, in the fifteenth century, that it would cure the tooth-ache; Wecker, in the sixteenth, the head-ach, in which he is supported by Porta and Kircher, and in the commencement of the seventeenth century, magnetic ear-picks and tooth-picks were in great estimation; so late as 1784, Animal Magnetism (*which see*) was in great repute; and in 1798 the application of metallic tractors was a certain cure for all nervous affections and other diseases.

MAHOGANY. This wood was brought into England from America, about the year 1695, by Capt. Gibbons, the brother of Dr. Gibbons, a celebrated physician who resided in King-street, Covent garden. At first it was only used as ballast, being on account of its hardness rejected by the carpenters as injurious to their tools. Mrs. Gibbons, however, prevailed on Woollaston, an upholsterer, to make for her a candle-box of this wood. the grain of which when finished, appeared to such advantage, that it led to an order for a bureau of the same material, and this was so greatly admired as to become the subject of general conversation. The Duchess of Buckingham having procured some of the wood from Gibbons, employed Woollaston in making various articles of furniture for her, and thus introduced it into the houses of most nobility and gentry.

MAJESTY. The title of Majesty was considered originally as solely applicable to the whole body of the Roman Republic, but the power afterwards passing into the hands of a single person, the appellation of Majesty was transferred to the Emperor and the imperial family. Pasquier observes, that this title was not commonly assumed by our Kings till the time of Henry II.

MAIL. The present system of mail coaches was established by John Palmer, Esq. in 1785, previous to which letters were conveyed from the Metropolis to distant parts of the country by carts with a single horse to each, or by boys on horseback, in consequence of which many robberies were committed, and delay in the transmission of letters occurred. (*See Post.*)

MALT. The method of converting corn into malt by the process of germination and drying, was practised by the Egyptians and Gauls, in the manufacture of their ale. In the Saxon time, malt was made of oats and wheat as well as of barley; but the former is not noticed after the commencement of the seventeenth century, and it was forbidden to be made from wheat in 1815.

MANGANESE. This substance has been long employed in the purifying of glass, and was called glass makers' soap, or black magnesia. Bergman, in 1774, first discovered that it was a distinct metal, and his pupil Ghen, by chemical processes, was enabled to extract the metal from the native oxyde of manganese in its pure state.

MAP. Eustathius relates, that Sesostris, King of Egypt, having over-run great part of Asia and Africa, recorded his marches in maps, and gave copies of them to the Egyptians and Scythians. Josephus also informs us, that the men who

were commanded by Joshua to measure the Land of Promise, were accompanied by people skilled in geometry : but we have no regular mention of a map before that noticed by Herodotus, as having been constructed by Aristagornus of Miletus, on brass or copper, and intended to exhibit the route through those countries which were traversed by Cleomenes, King of Sparta, for the purpose of attacking the Persian empire, and of restoring the Ionians to their liberty : and that maps were well known to the Athenians in the time of Socrates appears from the circumstance of his tauntingly requesting Alcibiades, who was boasting of his consequence, to point out his territories in Attica on a map.

The Romans followed the example of Alexander in having regular surveyors attached to their armies, and the generals on the occasion of a triumph used to exhibit to the people a large painting or map of the countries they had conquered. A regular survey of the Roman empire was commenced upon by Zenodotus Theodotus and Polyclitus, under the consulship of Julius Cæsar and Marc Antony about 44 B. C., which employed them twenty-five years : but it was not till the time of Ptolemy Claudius, who flourished towards the middle of the second century that maps were regulated by celestial observations, and the relative situation of places described by their difference of latitude and longitude.

The surveyors employed by the Romans were generally of the Alexandrian school, for the Romans themselves seemed to hold the liberal sciences, except that of architecture, in contempt, and soon after the death of Ptolemy, the connection of geometry with astronomy, and the construction of maps on scientific principles was neglected or forgotten, and so remained till about the middle of the sixteenth century, when it was revived by Gerard Mercator.

The oldest maps in existence are the Pentenger tables. We may form some idea of their accuracy from the manner in which a map of the Holy Land was constructed by

Brocardus, a monk of the middle age, in which the city of Acon is placed in the centre, because it was the best known, and not from its being in the middle of the country.

Anderson informs us that maps and charts were introduced into England about 1489 by Bartholomew, the brother of Christopher Columbus, who was detained for some time in England by Henry VII., and procured a maintenance by making and selling of sea charts, which were till then entirely unknown, and that in this year he printed a map of the world, and dedicated it to the king. A map of England was constructed by Lilly in 1520; and a complete set of maps of the Counties of England and Wales was engraved by Christopher Saxton in 1573.

Werner was the first who proposed to delineate the different strata of a country or its geognostic features by different colours or signs on a map.

MARBLE. Pliny informs us that he knew of no building incrustated with marble of greater antiquity than the palace of Mausolus, king of Caria, described by Vitruvius; Crassus was the first Roman who embellished his house with marble, about 90 B. C., but it soon afterwards became general, and several palaces in the time of Cæsar were built of it.

During the Saxon period marble was occasionally used in the construction of fonts and also for coffins. In the time of Henry I. the choir of Canterbury cathedral was paved with marble, and the walls which separated the choir from the porticos composed of marble slabs. In the sixteenth century marble was common in palaces and noblemen's houses.

The art of cutting marble with the saw is of great antiquity: Pliny gives an account of the different kinds of sand used for cutting it, for it is the sand properly, says he, and not the saw which produces that effect. Clark acquaints us that all the cavities of the famous Parian quarry were cut with the greatest nicety, and shewed by the sharpness of their

edges, the number and size of all the masses of Parian marble, which had been removed for the sculptors of ancient Greece : he adds that if the stone had possessed the softness of potter's clay, and had been cut by wires, it could not have been separated with greater nicety, evenness and accuracy ; the most evident care being every where displayed, that there should be no waste of this precious material.

The ancients esteemed their marble most which was of one colour, particularly the white of Paros ; the art of colouring marble is therefore a modern invention, and Kircher is the first who published any thing concerning it.

The small round *playing marbles* were introduced into this country from Holland, about the middle of the seventeenth century.

MARINES. According to Grose the first regiment of marines was formed from the third regiment of foot in 1684, and the men were clothed in yellow coats, lined with red, having for their colours a red cross, with rays of the sun issuing from each of its angles.

MARKET. Both at Athens and Rome there were appropriate places for the sale of provisions on particular days, and people were appointed to ascertain the quality of the food, and that proper weights and measures were made use of. The Anglo-Saxons had their markets at the entrance of the town, and generally on a Saturday.

MARQUE. The origin of letters of marque or reprisal is thus stated :—" In the year 1295 a merchant of Bayonne complained to Edward I., who then held his court in that city, of his having been plundered by an armed force from Lisbon while he lay at anchor on the Portuguese coast, although peace then subsisted between England and Portugal : Edward therefore granted him letters of marque

(*licentia mercandi*) against the subjects of Portugal, and particularly the people of Lisbon, with authority to seize their persons and effects for a period of five years, or until he should have reimbursed himself and no longer—hence the granting of letters of *marque* has frequently been the prelude of a regular war."

MARQUETRY. The art of enlaving different pieces of wood to resemble mosaic is of great antiquity, it was introduced into Rome from the east, and was carried to great perfection by the Italians in the fifteenth century. Formerly the finest works of this kind were only made with black and white wood, and were then called *morescoes*: but John, Abbot of Verona, having invented a method of staining wood of different colours, introduced buildings and perspective: afterwards a number of new woods being brought over from America, the art was made capable of representing drawings, and therefore *marquetry* has been often denominated the *art of painting in wood*.

MARQUIS. This title was first conferred as an ensign of honour upon Robert Vere, Earl of Oxford, who was created Marquis of Dublin by Richard II. in 1385.

MARRIAGE. We find from the case of Dinah, mentioned in Genesis, that in the earliest periods of the world, some civil or religious ceremony was deemed essential to an honourable alliance, when a woman consented to leave her father's house for that of a stranger. Cecrops, king of Athens, is said to have been the author of the honourable institution of marriage among the Greeks. And after the Commonwealths of Greece were established, marriage was much encouraged by their laws, though forbidden within certain degrees of consanguinity.

Selden has proved, in his "*Uxor Hebraica*," that plurality

of wives was allowed of, not only among the Hebrews, but also among all other nations, and in all ages ; the *ancient Romans*, however, being more strict in their morals, never practised it, though it was not forbid among them ; and Mark Antony was the first who took the liberty of having two wives. From that time it became frequent in the Empire, till the reigns of Honorius and Arcadius, who first prohibited it by an express law in 393 ; but this was repealed by the Emperor Valentinian III. who permitted all the subjects of the empire, if they pleased, to marry several wives, nor does it appear from the ecclesiastical history of those times, that the bishops made any opposition to this introduction of polygamy ; however, when the Christian religion was more firmly established, polygamy became to be universally condemned, as if it had been positively and expressly prohibited in the Sacred Writings ; and even a second marriage in the primitive church was accounted a species of bigamy ; and there are some ancient canons, which forbid ecclesiastics from being present on that occasion.

Dispensations for marriages were first granted by Gregory the Great, A. D. 590.

The English law considers marriage in no other light than as a civil contract ; and it is said that Pope Innocent III. about the year 1200, was the first who ordained the celebration of a marriage in the church. In the time of the great rebellion all marriages were performed by the Justices of the Peace, and these marriages by 12 Charles II. were declared valid : marriages are now principally regulated by an act passed 26 Geo. II : but as this does not extend to Scotland, many persons have found their way thither to be married in a clandestine and irregular manner, and Gretna Green being the nearest village to the English border, is resorted to for that purpose.

The publication of marriage by banns was instituted in 1210.

It has been remarked that the number of children may be arranged at least at four to each marriage—the proportion of males to females being as fourteen to thirteen; the proportion of married men who die to married women, as three to two; and that married women live to a greater age than single women.

MASKS are said to have been worn by the Egyptian priests: theatrical masks were in common use both among the Greeks and Romans, as also in the mummeries of the Anglo-Saxons: but the period of their introduction, Aristotle says, could not be ascertained; while Suidas mentions Thespia, and Horace *Æschylus*, as having first employed them. *Poppo*, the wife of *Nero*, wore a mask to guard her complexion from the sun and weather; and in the latter part of Elizabeth's reign, small black masks were sometimes worn by ladies in public.

MASONS. The antiquity of the society calling themselves Free or Accepted Masons, is by some traced to the period of the building of Solomon's temple. Preston, in his *Treatise on Masonry*, conjectures that it existed in this country prior to the Roman invasion, and that the Druids had among them several customs similar to those of the Masons, that it was also encouraged by *Cæsar*, and by many Roman Generals who were Governors in Britain; and that regular lodges or conventions of the fraternity, had their rise in the time of *Caracilius*, a British King, who collected a number of skilful Masons from various countries, and appointed his steward, *Albanus*, superintendant or grand master of their assemblies, which *Albanus* is said to have been the famous *St. Alban*, who suffered martyrdom in Britain for the christian faith. *St. Austin* is said also to have distinguished himself as being the head of the fraternity, and to have founded the cathedrals of *Canterbury*, *Rochester*, *St. Paul's*, and *Westminster*. There

is still existing an ancient lodge of masons in York, which traces its origin to the time of King Athelstan, being founded by Edwy, the King's brother, in 926, who obtained for it a charter from Athelstan, and became himself grand master. During the reigns of Henry I. and Stephen, the masonic lodges regularly assembled, and in the time of Henry II. were superintended by the grand master of the Knights Templars. In 1424, an Act was passed, prohibiting the yearly congregations and confederacies of masons in their chapters, under pain of felony, but in 1442 Henry VI. presided over the lodges in person, nominating William Wanefleet, Bishop of Winchester, grand master. On the 24th June, 1502, a lodge of masons was formed in the palace, at which Henry VII. presided as grand master, and having appointed John Islip, Abbot of Westminster, and Sir Reginald Bray, Knight of the Garter, his wardens for the occasion, proceeded in great state to the east end of Westminster Abbey, where he laid the first stone of that excellent piece of Gothic architecture, called Henry the Seventh's chapel.

It is said, that Queen Elizabeth, hearing that the masons were in possession of many secrets which they refused to disclose, and being naturally jealous of all secret assemblies, sent an armed force to York to break up their annual grand lodge, but being afterwards thoroughly convinced the fraternity of masons did not interfere in State affairs, became reconciled to their assemblies, and from this time masonry made considerable progress.

During the reign of Queen Anne it was determined that the privileges of masonry should not be confined to operative masons, but that people of all professions should be admitted to participate in them, provided they were regularly approved and initiated into the order.

It is by some conjectured that the epithet *free* was first assumed about the middle of the seventh century, when many of our public buildings, in the Gothic style, were erected by

men in companies, who called themselves *free*, from their having full liberty to work in any part of the kingdom; others say it originated from a combination among the masons, not to assist in rebuilding of Windsor Castle, by Edward III., unless upon *free* terms, and that they agreed upon signs to assist one another against being impressed.

MASQUE. A species of theatrical amusement, which, according to Hall, was introduced into this country in 1512, and during the sixteenth and seventeenth centuries was held in great estimation by the nobility, and frequently exhibited at the King's palace.

MASQUERADE. This kind of entertainment was invented by Grenacci, an Italian, about the commencement of the sixteenth century; and the first representation of one in England, uniting, after the Venetian fashion, elegance with rude mirth and revelry, was by command of the Queen of Charles I., which being unfortunately fixed for a Sunday, was considered as a profanation of the day, and occasioned a considerable ferment among the populace, inso-much that a scuffle ensued between the soldiers and people, in front of the banqueting-house, and several lives were lost; this produced a general dislike to the Queen, aggravating every imputation cast upon that unfortunate lady, and for near a century made masquerades themselves very unpopular.

MASTER OF THE CEREMONIES. An officer first appointed in the time of James I., for the introduction of ambassadors and strangers of quality into the presence; he is supposed to be therefore a master of languages, and is in constant attendance at court.

MASTIFF. Britain was formerly so celebrated for this breed of dogs, that the Roman Emperors appointed an officer

in the island, with the title of Procurator Cynegii, whose sole business it was to breed and transmit from hence, such mastiffs as would prove equal to the combats at the amphitheatre. Strabo assures us, that these dogs were even trained for war; and made use of by the Gauls in their battles.

MAUSOLEUM. So named from the magnificent monument erected to the memory of Mausolus, by his widow, Artemisia; and esteemed one of the seven wonders of the world.

MAYOR. The city of London was originally governed by Portreeves; but at the coronation dinner of Richard I. the Chief Magistrate of London had the title of Bailiff; and acted as Chief Butler. The title of Mayor was given by John to Henry Fitzalwin in 1208; and the civil importance of London was greatly increased, its corporation assuming that form and predominancy which, with a few alterations, it has maintained till the present time. The custom of presenting the Mayors before the Treasurer and Barons of the Exchequer on St. Simon and St. Jude's day, originated in the reign of Edward II. In 1328 the Mayors had the privilege of sitting in all places within the liberties of the city, as the King's Chief Justice. In 1381 Walworth, the Mayor, having killed the rebel Watt the Tyler, was knighted on the spot by Richard II.; and upon this occasion the dagger, it is supposed, was added to the city arms. Sir John Norman in 1453 is said to have been the first Mayor who went by water to Westminster to be presented—and hence the origin of the Lord Mayor's shew. The Lord Mayor's feast is dated from the year 1501, when Sir John Shaw was Mayor, who is also stated to have rode a-horseback to the Fleet ditch, where the water procession commenced. In the reign of Queen Anne the state-carriage was introduced, Sir Gilbert Heathcote being the last Mayor who rode on horseback. In the year

1741 the Mayor died, and his successor, who it appears was not a freeman of one of the twelve companies, was sworn in at the Tower gates.

MEASLES. This disorder is not noticed by any of the ancient Greek or Roman physicians, but appears to have been first treated of by Aaron, a celebrated Arabian physician, contemporary with Mahomet.

MEDAL. The most ancient medals which have been discovered that have portraits, were struck in the reign of Alexander I. of Macedon, about 500 B.C. ; then follow those of Sicily, Egypt, and of Sparta, extending from the period of Alexander the Great to the birth of Christ. The Roman medals present a distinct series of the Emperors, from Julius Cæsar to the destruction of Rome by the Goths ; from which time we meet with no medals till 1330, when a gold one of David II. of Scotland was issued, and in the next century medals appeared in Italy, and from that time successively in most of the countries of Europe.

Vaillant, in 1681, first shewed the importance of medals in ascertaining the dates and arranging the order of events in ancient history.

The large medals called *Medallions* appeared during the government of Nero, and seem to have been intended for imperial largesses on occasion of public rejoicings ; sometimes they were given as honorary marks of distinction for military services, *dona militaria* ; the brass medallions, and those having copper in the centre with a brass border, are of beautiful workmanship, and if prior to the time of Hadrian, of great value, but they afterwards became less rare.

A gold medal and chain was a common present in the middle ages, from Princes to men of eminence in the liberal sciences.

MEDICINE. The Egyptian Thauth, called by the Greeks Hermes Trismegistus, first treated upon medicine in a systematic manner, and left behind him several instructions and medical precepts, which the physicians and priests were bound strictly to observe under the penalty of death, whatever might be the result. Æsculapius was worshipped by the Greeks as the God of Medicine, having been instructed in the east by his father Apollo, in which he was so successful that Jupiter was obliged to remove him from the earth, to prevent the desolation of Pluto's kingdom. Hippocrates, however, who flourished about 400 B. C., may be considered as the father of the present practice of medicine. Pliny says, that the Romans were without physicians till about the year 300 B. C., when in consequence of a destructive disorder that raged in the city, they sent a deputation to the temple of Æsculapius, at Epidaurus, for advice, and soon afterwards erected a temple for him in a small island on the Tiber.

The earliest medical work, written in the English tongue, is supposed by Fuller to have been Andrew Bord's *Breviary of Healthe*, published in 1547, which has the following dedication to the faculty :—"Egregious Doctors and Masters of the Eximinian and Arcane science of Physic, of your urbanity, exasperate not yourselves against me for making of this little volume."

MERCURY. This metal was known to the Greeks under the name of hydrogysum, or water of silver. Pliny informs us that it was principally procured from Spain ; and was used in the process of separating the more valuable from the baser metals ; the Arabians were the first who applied it to medicinal purposes.

METAL. We have no certain account when or by whom

the several metals were discovered ; but the opinion of Aristotle and Lucretius, that it was owing to the accidental burning of large tracts of brushwood, seems not improbable ; iron is said to have been extracted from the stones by the burning of the forest on Mount Ida ; and in a similar way the silver mines of Spain were disclosed to the shepherds of that country. Thus Æschylus attributes the discovery of all kinds of metals to Prometheus, or in other words to the action of fire. Most of the common metals were known in the time of Abraham, and at a very early period the Egyptians or Brahmins had given to them the same characters they had previously bestowed on the solar system : the circle which represented the sun, ☉, was conferred upon gold, as being the most perfect of metals ; the half circle ☾ which was figurative of the moon, from its being the only heavenly body that appeared in that form to the naked eye, was made the symbol of silver, as the next esteemed metal to gold ; the character ☿ being the caduceus or wand of Mercury, was given to the metal of that name, from its supposed affinity to the precious metals, the circle being gold, the half circle silver and the cross being meant to represent that quality in the metal, of which if it were deprived, it would be converted into either gold or silver ; the looking-glass of Venus, ♀, was the character given to copper, as expressive of the probability of its being convertible to gold ; the lance and shield of Mars, ♂, intimated that from the medicinal powers of steel, gold might probably be concealed in it ; the characters of Jupiter's thunderbolt, ⚡, and Saturn's scythe, ♄, were given to tin and lead, from the probability of their being convertible into silver. Others, however, conjecture that these hieroglyphics are but the initial letters or abbreviations of the names of the several divinities in the Greek language.

The ancients, it is said, were capable of discovering the purity of metals by their smell.

The Prince's Metal, so called from its being invented by Prince Rupert, in 1680, is by Pinkerton supposed to be the same as the ancient Corinthian brass, and has lately been brought to considerable perfection by Messieurs Le Croix and Le Blanc.

METEORIC STONES have been discovered in various parts of the earth, but the first attempt to analyse them was made by Howard, from one which fell near Benares, in 1798, and was sent to Sir Joseph Banks; this stone was covered with a thin crust of a dark black colour, strewed with little asperities, which when touched produced an impression similar to that of a skin slightly shagreened; the interior was of an ashy grey colour, of a granular texture, resembling sand-stone, in which iron in its metallic state might be easily distinguished; the analysis gave likewise siliceous magnesia, oxyde of iron, and oxyde of nickel, and a small quantity of sulphur. Several other stones, which have since fallen at different periods both in France and England, have also been analysed, and have afforded similar results.

METHODISTS. This religious sect first appeared at Oxford, in 1729, and soon divided into two parties, the one under the direction of the two brothers John and Charles Wesley, and the other under that of George Whitfield, all of whom had been educated at Oxford, and received episcopal ordination, professing themselves advocates for the articles and liturgy of the established church. The appellation of Methodists originated from the regular distribution of their time, their orderly and composed demeanour, and the supposed purity of their religious principles.

MICROMETER. The invention of this astronomical instrument for measuring small distances in the heavens, has been disputed between Auzont (who first published an

account of it in the year 1666) and Mr. Gascoigne, who, according to a paper forwarded by Mr. Townly to the Royal Society, had invented a micrometer capable of marking 40,000 divisions in a foot, (which was of equal, if not greater power, than that since made by Auzont,) and employed it for some years, not only in taking the diameters of the planets, and distances upon land, but in determining other matters of nice importance in the heavens. Others assert that Huygens ought to be considered as the inventor of the micrometer, and that he published a description of one under the name of Vergula in 1659.

MICROSCOPE. Huygens informs us that Drebell was in possession of a microscope in 1621, and that he was reputed the inventor of it; though the merit of the invention is also claimed by Fentana, a Neapolitan, in 1618. William Burrell, who was Ambassador from the States of Holland to the British Court in 1619, asserts that Zacharius Jansen, in conjunction with his son, presented the first microscope they had constructed to Prince Maurice and Albert, Arch-Duke of Austria, and that Cornelius Drebell shewed him the identical microscope which had been given to the Arch-Duke.

The double microscope is the invention of Farnelli in 1624; and the solar one, of Lieberkuhn, in 1738.

MILE. The length of the present English mile is regulated by a statute passed 35th Elizabeth, A. D. 1580, and is supposed to be the same as that used by the Romans in this country, though the ancient Roman mile is stated to be 1610 yards, and the modern one 1628 yards.

Mile-stones, by the Romans called *termini*, were first placed by Caius Gracchus on the Appian highway, after the manner of the Gauls, who previous to the subjection of their country by Cæsar, had stones which they called leagues (hence league) placed at regular distances on their public roads.

MILITIA. Alfred directed that the several counties should provide a certain number of soldiers, for the defence of the kingdom in the event of foreign invasion ; and the Normans, by the introduction of the feudal system, established a military government ; but at the Restoration, this system was abolished, and the present mode of raising the militia adopted in its stead.

MILLS. The simple expedient of pounding in a mortar was for many ages the only one practised for reducing corn into flour ; but the process was at length improved by the application of a grinding power, and the hand mill-stones of India are probably one of the earliest inventions for this purpose. Mills and mill-stones, according to Pausanias, were invented by Myla, the son of Melage, first King of Persia. Strabo says that water-mills were common in various parts of Asia about 100 B. C., but were not used by the Romans till the time of Augustus. Saw-mills, it is said, were erected in Germany in the fourth century, though we find writers of more modern times mentioning them as rare and uncommon. On the discovery of Madeira in 1420, they were made use of for sawing into planks the timber on the island. The first saw-mill was erected in Norway in 1530. In Sweden there is one that has seventy-two saws attached to it. These mills were introduced into England in 1663, and for a long time occasioned a considerable commotion among the sawyers.

Wind-mills were brought from the east, and introduced into England at the period of the crusades : those which turn wholly round are the most ancient. The revolving roofs were invented by the Flemings in the sixteenth century.

MILLENEUM. The idea of a milleneum, which has been adopted from the too literal interpretation of a passage in the Apocalypse, according to Eusebius, originated with St. Papias in the second century, and was for a considerable

time supported by the fathers of the primitive church : the subject was revived by Whiston, according to whose computation the milleneum was to have commenced in 1720.

MINE. The ancients had a method of undermining the walls of besieged places by supporting the upper stratum with wooden planks and pillars, and having filled the vacant space with combustibles, set fire to the props, and thus made a breach in the citadel : but this art was more particularly studied after the invention of gunpowder ; and the Genoese introduced the present system of mining, in their attack upon the fortress of Sargenella in 1487. Counterminees were employed to great advantage by the Candians, when besieged by the Turkish forces in 1666.

MINERAL WATERS were first medicinally recommended and analysed in 1572.

MINSTRELLS were the genuine successors of the ancient bards, and were held in the highest reverence by our Saxon ancestors, and their brethren the ancient Danes ; their skill was considered as something divine, their persons were deemed sacred, their attendance was solicited by kings, and they were every where loaded with honours and rewards. But on the introduction of Christianity, and when some taste for literature began to prevail, this rude admiration considerably abated. The minstrels during the time of the first Norman kings, continued a distinct order of men, and got their livelihood by singing to the harp at the houses of the great, where they were always hospitably and respectfully received, and retained many of the honours and privileges of their predecessors the bards.

In the time of Henry VIII., the writers of verses or moral speeches, intruded without ceremony into all companies, not only in taverns, but in the houses of the nobility themselves ;

and although in the early part of Elizabeth's reign, the minstrells had lost much of their dignity, and were sinking into contempt and neglect, yet they still retained a character far superior to our old ballad singers ; but towards the close of her reign, they were sunk so low in the public opinion, that they were ranked, in a statute then passed, among rogues and vagabonds, and after this they are no longer noticed as a distinct profession.

MINUET. This elegant and stately dance, which seems so appropriate to the decorum of a court, originated in the province of Poictou, about the close of the sixteenth century. It was formerly the etiquette in the British Court, that none could join in a country dance unless they had previously walked a minuet.

MIRROR. The ladies seem at an early period to have taken advantage of the reflective power of polished metals in the formation of mirrors. Mention is made in Exodus of the Jewish women offering their brazen mirrors (translated looking glasses) for the purpose of making a laver or basin, for the purification of the priests ; and Job also speaks of molten looking glasses. To this day the females of India have a circular plate of polished steel affixed to their thumb ring, that they may immediately replace any stray curl, or, by a gentle touch of antimony, give an additional brilliancy to their eyes.

The Greeks and Romans usually made their mirrors of a mixture of copper and tin, though the largest and best were of pure silver. The Romans had also mirrors made of the Obsidian stone, which by some is described as a kind of volcanic lava, brought to Rome by one Obsidius, on his return from Ethiopia, while others state it to have been a very hard and opaque mineral, which admitted of a high polish, and received the Greek name of Opsionus, because it reflected the images of things.

Some authors affirm that glass mirrors were made by the Sidonians : if so, they must have been of a very imperfect nature, since those of metal were preferred by the Romans : it seems, however, probable that, under the Emperors, the Romans had discovered that glass reflected images when placed on a dark ground, and had some method of pouring melted lead upon them for this purpose. Isidore, who flourished in the commencement of the seventh century, makes some allusion to it, and Peckham, an English Franciscan monk, in his treatise on Optics, written in 1274, speaks of glass mirrors having a plate of lead at their back ; but that they were not generally known would appear from metal mirrors being common in France in the fourteenth century.

The present method of covering glass with tin-foil and quicksilver, is said to have been invented in Venice, in the commencement of the sixteenth century.

Glass houses for manufacturing mirrors were established in France, in 1634, but considerably improved by Thevoſt at the close of the seventeenth century, who introduced the art of *casting glass plates*, some of which have exceeded nine feet in length, by five in breadth ; glasses have also been blown to the length of five feet by about thirty inches in breadth.

Looking glasses were imported into England from Venice, previous to which mirrors of silver and other metals were used.

MNEMONICS. The ancients practised various plans for the purpose of assisting their memory ; some had recourse to medicine, and others to art ; Cicero informs us that Simonides, the Greek poet, who flourished about 500 B.C., had a method of refreshing his memory by considering different parts of a room, and various articles of furniture, as symbolical representations of other things, and was thus enabled to facilitate the recollection of a premeditated composition. The moderns have also suggested various modes of artificial memory, such as the *Ars Memorativa* of Publicius, written in

1492, and of Baptista Porta in 1602. The *Simonides Redivivus* of Morhof, and the *Memoria Technica* of Gray.

MONAGRAM. This kind of Hieroglyphic or cypher was common among the Greeks and Romans, and for several centuries used by the Emperors and Sovereigns on the Continent by way of signature. Monograms were common in this country during the fifteenth and sixteenth centuries, particularly among the first printers and booksellers; the sign manual also of several of our kings at this period approached very near to a monogram.

MONK. According to the original signification of this word, many of the ancient prophets might, from their secluded mode of living, be stiled monks; but this appellation seems to have been first given to those people who in the early stages of Christianity, retired into solitary parts or foreign countries for the purposes of religious meditation, and to avoid the persecutions of those days. Among this number was St. Anthony, who was born at Coma, in Egypt, in the middle of the third century, and having at an early age given all his possessions to the poor, devoted himself to religion in a state of solitude and poverty, and after a long and painful noviciate among the tombs, retired into the desert, and about the commencement of the following century fixed his residence on mount Colzim, near the Red Sea, where he has the credit of having first established a regular monastic body, to whom he prescribed certain regulations or forms of Government, and where an ancient monastery is still existing, which preserves the name and memory of the saint. The prolific colonies of monks multiplied with rapid increase on the sands of Lybia, upon the rocks of Thebais, and in the cities of the Nile. To the south of Alexandria, the mountain and adjacent desert of Nitria, were peopled by 5000 Anchorites; and the traveller may still investigate the ruins of 50

monasteries, which were planted in that barren soil by the disciples of St. Anthony. St. Martin, Bishop of Tours, followed the example of St. Anthony, and erected several monasteries in Gaul, and at his decease, which occurred in the year 397, the funeral service was performed by 2000 monks. Soon after this event the monks began to emerge from their convents, where they had hitherto resided in a very quiet and inoffensive manner, and, from their studious habits and knowledge, to acquire a considerable influence in society, so that in the course of a few years they were admitted by Symmachus, bishop of Rome, into the clerical order, though still subject to the immediate jurisdiction of the bishops, from which they were at length exempted by Gregory the Great, and in return have always strictly devoted themselves to advance the interests and maintain the dignity of the Roman Pontiff.

St. Augustin was accompanied by about forty Italian monks, when he was sent by Gregory the Great to convert the Anglo-Saxons, at the close of the sixth century, and having been very successful in his mission, formed at Canterbury a regular monastic establishment. This order in process of time began to assume a temporal as well as a spiritual power, and to claim and insist upon privileges incompatible with the interests and safety of the state—for this reason they were expelled the kingdom by John in 1207, and again by Richard II. in 1390; after which they conducted themselves with greater respect to the sovereign power, till the reign of Henry VIII., who, observing that they united with the Pope in opposing his divorce with Catherine of Arragon, determined to unite the Supreme Government of the Church to the Crown, and to free himself of subjects who acknowledged the authority of a foreign power: he therefore procured an Act of Parliament for the dissolution of all the monasteries and other religious houses under the controul of the monks; and since that period the monastic establishments have not been tolerated in this country.

There seem to have been three different classes or orders among the ancient monks, viz. :

The *Solitaries*, such as the *anchorites* and *hermits*, who resided in solitary cells, the distinction between them being, that the former never quitted his residence; whereas the hermit frequented the towns and villages, and had a small garden generally attached to his dwelling. The *Eremitics*, who lived in community with several others, and under the obligation of a vow, submitted to certain regulations and penances imposed by the superior of the monastery or convent; and the *Sarabaites* or itinerant monks, such as the pilgrims and palmers, who usually carried with them a staff, a bell, a rosary, and a scrip; and if they had visited Compostella, in Spain, where the body of St. James is reported to lie buried, or the Holy Land, they adorned their hats with an escalop-shell, or cockle-shell.

The *Augustin* or *Austin Friars* were originally hermits, whom Pope Alexander IV. first congregated into one body, under their General, Lanfranc, in the middle of the thirteenth century, soon after which this order made its appearance in England, when they had about thirty-two houses at the time of their suppression.

The *Dominican* or *Preaching Friars* were founded by Dominic de Gusman in 1170: they appeared in England in the commencement of the following century, and in 1221 had a monastery at Oxford. In the year 1276 the Mayor and Aldermen of the city of London gave them two whole streets, by the river Thames, where they erected a very commodious convent, whence that place is still called Black-friars, from the name by which the Dominicans were known in England. This order has always been particularly devoted to the aggrandizement of the Pope's authority, and to them the inquisition is attributed.

The *Franciscan* or *Grey Friars* owe their origin to Francis, a rich merchant of Assisi, in the province of Umbria, who,

recovering from a severe illness, took upon him the vows of poverty, and established a society of monks in 1223. There is no certain account of their having any regular houses in England, prior to the reign of Henry VII.

About the year 370, John, Emperor of Æthiopia, erected a religious order of knighthood, under the title and protection of St. Anthony, which was revived in Europe at the close of the thirteenth century, and came into England in the reign of Henry III. These monks assumed to themselves the power of giving as well as removing the disorder called after them St. Anthony's fire, or the erysipelas.

The *Knights Templars* were a military order of monks, established at Jerusalem for the protection of pilgrims in the commencement of the twelfth century, and called Templars, from their residence being near the temple. This order in process of time acquired great riches, which led to its being suppressed in 1312. They are noticed in England in the time of Stephen; and the Temple in Fleet-street is supposed to have taken its name from them. A branch of these, called the *Order of the Knights of Jerusalem*, was established at Clerkenwell, and continued till the general suppression of monasteries.

MONTH. The Egyptians at a very early period divided the year into twelve lunar months, of thirty and twenty-nine days each, commencing at the autumnal equinox, and they were followed by the Israelites, except that their *sacred* year was ordered to commence in the month of Ahib or the vernal equinox: the Greeks also adopted the same plan. With respect to the Romans, we find that under Romulus they had but ten months, of which the first, March, was dedicated to Mars, the supposed father of Romulus; the second, April, to Venus; the third, May, to Maia, the mother of Mercury; the fourth, June, to the Goddess Juno: the other months had their names from their order, as the fifth, sixth, seventh,

eighth, ninth, and tenth : Numa, however, added two months more,—January, from the God Janus ; and February, from the expiations called februa, when sacrifices were offered to departed souls. Julius Cæsar, in his reformation of the calendar, introduced his name in lieu of the Quintiles or the fifth month ; and his successor, Octavius, had the sixth month named in honour of him, Augustus ; and thus the names of the months have continued throughout almost the whole of Europe till the present time, having been introduced into this island by the Romans.

MONUMENTS. The Egyptians in the construction of their pyramids seem to be the first who paid any particular respect to their dead, or desirous of transmitting the remembrance of their virtues to future ages ; the Greeks introduced small columns or tombstones to the memory of their relatives and friends, upon which epitaphs were engraved, and sometimes the insignia of the profession of the deceased.

MORTALITY, Bills of. (*See Bills of Mortality.*)

MORTAR. The ancients not only made their bricks of greater durability than ours, but used a cement so very hard and binding, as at this day to excite the astonishment of our ablest architects.

MORTAR. This term is also used for a species of cannon, of which it is supposed to be the origin, for, as has been already noticed, the discovery of the destructive powers of gunpowder was owing to the accidental ignition of some charcoal and nitre, in the chemical mortar of Bartholdus Schwartz, and therefore, the first guns were made in the shape of a mortar, and employed in propelling large stones against the works of the besieged ; shells or bombs were fired from them at the siege of Naples, by Charles VIII. ; id

1495. The method of throwing red hot balls out of mortars was practised by the Prussians at the siege of Stralsund, in 1675.

MOSAIC. This beautiful method of cementing various kinds of stones, glass, &c., seems to have originated in Persia, from whence it found its way into Greece in the time of Alexander, and into Rome about 170 B. C. It was principally made use of in decorating the floors of their houses; and the Romans had slaves called Pavimentarii, who shewed great skill and taste in their arrangement, insomuch as to represent various descriptions of paintings; the moderns have enriched the art by the introduction of the finest marbles and even precious stones; and the sumptuous chapel of the Duke of Tuscany, exhibits a noble monument of the magnificence and piety of those princes, as well as of the patience and address of the workmen employed in it. A beautiful specimen of mosaic work is to be seen in the celebrated mausoleum of Shah Jehan, near the citadel of Agra, in India, and which is kept in repair by the British Government.

MOURNING. The usual mode among the ancients of expressing grief for the loss of a relation, was by rending their cloaths, and throwing dust or ashes over their heads.

In Europe the general colour for mourning is black, which also obtained among the ancient Greeks and Romans. In Turkey blue or violet; in Egypt yellow; in China white; Kings always wear purple. Queen Anne, on the death of her husband, Prince George of Denmark, wore black and white, with a mixture of purple in some parts of her dress, which was similar to the dress worn by Mary Queen of Scotland, upon the death of her husband Earl Darnley.

MUFFS were introduced into this country from France, about the close of the sixteenth century.

MUSEUM. This name was given by Ptolemy Philadelphus to a building he had erected at Alexandria, for the study of literature and the liberal sciences. The modern museums, as receptacles for natural and artificial curiosities, had their rise about the commencement of the sixteenth century. Sir John Tradescant, who lived in the time of Charles I., first gave a taste for these collections in England. The British museum was founded in 1759.

MUSIC. Diodorus Siculus says that music had its rise in Egypt soon after the deluge, and that the first sound that was heard came from the reeds on the banks of the Nile, when blown into by the wind; but Scripture mentions its being known before the flood, and that Jubal was the father of those who played upon the kinner and hugab, supposed to be the harp and pandean pipe. It will be needless however to attempt tracing the origin of an art, which, from its great antiquity, must be involved in obscurity, and have required many ages to reduce it to a regular system.

Some maintain that musical characters were invented by Terpander, who, according to the Oxford marbles, flourished at Lesbos about 670 B. C.; others attribute them to Pythagoras about two centuries afterwards: these characters consisted of the common letters of the Greek alphabet; but as there were more musical notes than letters, the defect was supplied by placing these letters in different positions—thus the letter Pi Π expressed different notes in all the following forms: Π Π ≡ Γ Γ.

The Romans about the close of the fifth century had for their musical characters the first fifteen letters of the alphabet, which Gregory the Great reduced to seven, but these were to be repeated under three different literal characters from octave to octave, the gravest of which he expressed by capitals, as A, B, C, &c.; the mean by manuscriptes, as a, b, c, &c.; and the highest by double letters, as aa, bb, cc, &c.

This seemed to be the general state of music till the commencement of the eleventh century, when Guido Arentine, a Benedictine monk of Arezzo, established the gamut, so called from his prefixing to it the Greek letter, gamma. It is said that having frequently remarked the iteration of the syllables, Ut, Ri, Mi, Fa, Sol, La, which commenced the different lines in the hymn to St. John the Baptist, he conceived that they formed a regular series of six ascending sounds, and therefore attached to each of them one of the first seven letters of the alphabet.

It is also said that Guido introduced the use of a staff with five parallel lines, upon which he placed points to denote the rising and falling of the voice, and therefore to him may be attributed the origin of the present musical characters; which is generally ascribed to De Muris, who lived in the commencement of the fourteenth century; but which are certainly noticed by Franco, who was a preceptor in a monastery at Cologne, in the middle of the eleventh century. It would be very difficult, if at all practicable, to trace the early rise and gradual improvements in musical notation, which was not finally settled till about the commencement of the sixteenth century, when the method of printing music from blocks was introduced.

Music was held in high estimation by the Greeks, and their historians have transmitted to us several extraordinary instances of its power over the mind. The Phrygian air, struck by the masterly hand of Timotheus, excited in the soul of Alexander the most violent passion for military glory, while the Lydian measure softened him to tears. The power of curing various disorders was also attributed to it; and even in very modern times, it was supposed to be the only remedy for the bite of the tarantula, or poisonous spider of Tarentum. Geoffrey, in his account of the insect to the Royal Academy of Sciences, in 1702, asserts that every tarantula had his par-

ticular and specific tune; but, in general, those that worked cures were of a very brisk and sprightly nature.

National airs, by occasioning reminiscences, have frequently a powerful effect on uncultivated minds: thus we are informed that the celebrated Swiss tune, called the *Ranz des Vaches*, was forbidden by the French government to be played to the Swiss troops under pain of death, as it immediately drew tears from their eyes, and occasioned them to desert, or die of what was called *la maladie du pays*, from their ardent desire to return to their native country—and there can be no doubt that the introduction of martial music previous to action, has a strong tendency to excite emulation and military enthusiasm.

NAME. Camden supposes that the names formerly given to persons were significative of some qualities or virtues they possessed, or their parents fondly hoped they might acquire, and that to imagine names were given without any meaning would be a reproach to our ancestors: accordingly, we find that Adam gave the name of Eve to his wife, because she was to be the mother of all mankind; and Porphyry remarks that the names of the ancients were very emphatical and concise.

Originally every person had but one name, which, by most nations, was given within a few days after the birth; but in order to prevent the multiplication of names, and to mark the distinction between people bearing the same name, it soon became necessary to add to it the name of the father, and hence the introduction of family or *surnames*: thus among the Hebrews Caleb is distinguished as the son of Jephthunah, and Joshua as the son of Nun; and among the Greeks, Achilles as the son of Peleus. The first trace of surnames in history, unconnected with relationship, occurs in the treaty between the Romans and Sabines, whereby, in order to consolidate the union between the two nations, it was stipulated that the Romans should add to their own names a Sabine name, and the

Sabines should in like manner adopt a Roman one, which were to be considered in future as their family or hereditary names. The Romans also were accustomed to assume new names in order to perpetuate the memory of some remarkable action or event: thus Scipio took the name of Africanus; and these different kinds of names were distinguished by them under the terms of *nomen*, *cognomen*, and *agnomen*.

The ancient Britons, according to Camden, generally took their names from colours; but these names are now lost or remain hid among the Welsh. When subdued by the Romans, they began to adopt the Roman names, some of which, though very corrupted, still remain. The Saxons introduced the German names of Edward, Oswald, &c.; and the Danes their Harold, Swayne, &c. Soon after the introduction of Christianity many assumed Hebrew names, as Matthew, Mark, Paul, John, David, Peter, &c.; and on the conquest other German names, such as William, Robert, Richard, Henry, Hugh, were introduced by the Normans. The ancient Britons, like the Hebrews, added the family to the personal name by the adjunctive noun *ap*; thus, Evan *ap* Rice, or Evan the son of Rice, which in process of time was corrupted to Evan Price; the Irish and Scots by the word *mac*, as Donal *mac* Neale; the Normans by the German word *Fitz*, as John *Fitz* William; and the English by the word *son*, as John, son of Richard, or John, Richard's son, which, in course of time, was converted to the surname of Richardson.

The Normans introduced the Roman custom of distinguishing their kings and some of their nobles by an *agnomen* instead of their family name: thus Edward was called Ironside, from his strength, and William II. Rufus, from the red colour of his hair; and in the time of Edward II. we meet with Adam de Gray, Adam, lord or owner of the estate of Gray; so Robert de Oiley, corrupted to Robert Doyley. It is from this alteration of names in early times, that many families who have neglected to keep up their pedigrees are at a loss to

account for the similar bearing of arms among those whose names are so widely different, while yet they might be originally descended from the same common ancestor.

NATIONAL DEBT. The commencement of the National Debt of England may be traced from the period of the Revolution, when our connections with Europe introduced a new system of foreign politics with the view of preserving what was called the balance of power on the continent. As this was attended with extraordinary expence, the expedient was adopted of anticipating the revenues of the state by borrowing sums for the current service, and laying no more taxes on the people than was sufficient to pay the interest of the sums borrowed: accordingly in the year 1695, the sum of twelve millions was borrowed from a society of merchants in the city, the interest of which, in any proportion of shares, the government undertook to discharge, and thus these shares being rendered on the faith of government readily transferable, the facility of borrowing money was in proportion to the supposed stability and resources of the government, in consequence of which a debt of a most alarming amount has been incurred, which, sooner or later, must lead to the most disastrous consequences. The following concise statement of it shews its gradual increase from its commencement to the year 1826.

In 1695	the public debt amounted to	1 million
1701	- - - - -	6 millions
1714	- - - - -	50
1739	when the war with Spain commenced	46
1749	the end of that war	78
1756	commencement of a war with France	75
1761	on the death of George I.	110
1763	the end of the war with France	146
1775	commencement of war with America	136
1794	the termination of that war	268

1794	commencement of war with France	232 millions
1796	- - - - -	300
1800	- - - - -	413
1803	- - - - -	509
1811	- - - - -	606
1814	- - - - -	717
1836	- - - - -	800

NAVIGATION. History represents the Tyrians as the first people, who had recourse to navigation as the means of increasing their commerce. Herodotus informs us that they circumnavigated the whole coast of Africa from the Red Sea to the mouths of the Nile, and founded a colony at Carthage, which, in process of time, equalled the parent state in her riches and enterprising spirit. Under the government of Hanno and Hamilcar the Carthaginians undertook voyages of discovery, and having boldly passed the straits of Gibraltar, made themselves acquainted with the European coasts and islands, and, according to some, penetrated as far as America, which they named the Island of Atlantis. On the destruction of Tyre by Alexander, which was followed by that of Carthage by Scipio, about 150, B. C., the whole emporium of commerce was concentrated in the new city of Alexandria, nor did it suffer any diminution when it became subject to the Romans, and was proclaimed the second city of the empire; but its commerce was materially injured by the erection of the eastern empire, and soon after the fall of the Roman power, was entirely extinguished by the Saracens. The art of navigation was, however, preserved at Constantinople, though principally confined to the Mediterranean sea. In the ninth century the Venetians commenced sending their fleets of merchantmen to all the ports of the Mediterranean, in which they were followed by the Genoese; and the superiority of the naval power between these rival republics was disputed till the fatal battle of Chioza, towards the end of the four-

teenth century, gave the empire of the sea and the superiority in commerce to the Venetians.

The present art of navigation dates its origin from the commencement of the fourteenth century, when the great advantages to be derived from the mariner's compass began to be properly appreciated. It is also considerably indebted to the Portuguese, and particularly to the persevering exertions of Henry, the brother of Edward, king of Portugal, who, about the year 1418, fitted out several vessels upon voyages of discovery, and laid the foundation of the science upon mathematical principles. The Portuguese have also the merit of connecting navigation with astronomy, by having first produced, in 1485, tables of the sun's declination, calculated for the use of the sailors, and instructed them in the method of finding the latitude of a place at sea, by taking the meridian altitude of the sun with an astrolabe. About the middle of the following century various modes were recommended for taking the longitude of a ship at sea, but this important and difficult operation was not brought to any satisfactory conclusion till about the middle of the last century, when accurate tables of the moon's motion were first published, and the subsequent introduction of the chronometer brought the art of navigation to its present state of perfection.

The English, however, made but little progress in the science till the time of Elizabeth, when the rich colonies which had been established by the Spaniards, Portuguese, and Dutch, naturally excited a spirit of emulation in this country, but it does not appear to have attracted the particular attention of the State till the time of Cromwell, in 1651, when the Navigation Act was passed, and confirmed by Charles II. in 1660, since which the British sailors have taken the lead of every other nation in science and enterprise.

The first person who circumnavigated the globe was Ferdinand Magellan, a Portuguese, in the year 1519: he was followed by Sir Francis Drake in 1580.

Many attempts have been made by modern navigators to discover a shorter passage into the Pacific ocean than by rounding the Cape of Good Hope, either by penetrating in a western direction through the great bays of North America, or by taking an easterly course along the northern coasts of Europe and Asia. The *north-west passage* was first attempted by Jacques Cortier, a Frenchman, who with this view explored the river Lawrence, and formed a settlement at Canada in 1534. He was followed by Sir Martin Frobiisher, under the patronage of the Earl of Warwick, who entered the straits of Hudson's Bay in 1567. John Davis in 1585 proceeded as far as the straits, to which his name is given; and in 1607 Henry Hudson sailed to eighty degrees and a half, north latitude, and explored the great bay which has perpetuated his memory. This enterprising navigator, in his third attempt in 1610, to discover an outlet through the bay, was basely deserted by his crew, who mutinied and left him and eight of the sailors to perish in that inclement spot. Two years afterwards Baffin explored the straits called after him. In 1740 the Government was induced, by the representations of Mr. Dobbs, to renew their exertions to discover this wished-for passage. Captain Middleton was sent out in command of one of the Government ships, to ascertain the practicability of the design; and a reward of £30,000 was offered to the master of any ship which should effect a passage; but this proving unsuccessful, Captain Cook in 1776 was selected for another attempt, in which the usual plan of discovery was reversed, and instead of attempting a passage from the Atlantic to the Pacific Ocean, he was ordered to proceed into the Pacific Ocean, and then by the straits of Kamschatka, to enter the frozen Ocean, and to make what progress he could along the northern coasts of America; and two other ships were at the same time ordered to explore Baffin's or Hudson's Bay, and endeavour to effect a communication with him, which terminating in the same unfortunate

way, all design of making further discoveries in this quarter was laid aside till the conclusion of the late war, when the attempt was revived under those skilful and enterprising officers, Captains Ross and Parry, and with every precaution which the nature of the climate required ; the result however seems fully to justify the opinion, that no practicable communication between the Pacific and Atlantic can be effected in this direction.

The first attempt to discover a *north-east passage* to the Pacific, along the northern coasts of Europe and Asia, was made by Sir Hugh Willoughby, in 1553, when in consequence of the sudden approach of winter, he was forced to run into an obscure harbour in Russian Lapland, called Arcana Keca, where he and seventy sailors, being the crews of two of his ships, were frozen to death ; the third ship, under Richard Chancellor, succeeded in entering the White Sea, and wintered near Archangel, being the first ship that had ever been seen on that coast ; from this place he travelled by means of sledges to Moscow, where he was favourably received by the Czar John Basilowitz. In the following summer some Russian fishermen discovered the two ships in Arcana Keca, and found Middleton sitting in his cabin with his diary and other papers before him. In 1646 a Russian vessel under the command of Deshneff succeeded in forcing its way along the northern coasts of Asia from Kamtschatka to about 125° E. long. of London : but this is a solitary instance ; and as there still remains a large cape which has never been doubled, a navigable communication between the Atlantic and Pacific in a northern direction seems absolutely impossible.

About the commencement of the seventeenth century a method of *submarine navigation* was introduced by Cornelius Dabrell, who contrived to row a vessel under water in the river Thames in the presence of James I. which vessel was supplied with a certain liquor that purified the air infected by the breath of the rowers, and restored such a proportion

of vitality to it, as would make it serve again for a considerable time. Fulton, an American, some years back, constructed a boat capable of holding eight men, with provisions for twenty days, and sufficiently strong to admit of its being submersed to the depth of a hundred feet : this boat had also an apparatus to supply air for eight hours. In another of an inferior size, Fulton himself remained an hour under water, during which time he made half a league of way with his boat horizontally situated and at various depths, and succeeded in blowing up a vessel in Brest harbour, by attaching a combustible machine to its bottom ; during the late war several ineffectual attempts were by these means made to destroy British vessels off the American coast.

NAVY. With respect to the *navy of England* it may be observed, that, until the commencement of the fifteenth century, our vessels of war were almost entirely composed of merchant-ships and others, hired by the Crown ; the Cinque Ports in particular were obliged to furnish a certain number, and even the other ports sent their portion of ships, which they maintained for fifteen days at their own charge, and probably this time was considered sufficient for sending either troops or stores to the continent. The fleet which Edward III. had before Calais, in 1347, consisted of 738 ships, carrying 14,956 mariners, being, on an average, but twenty to a ship. In 1394, Hakluyt mentions an English ship of 200 tons burthen, and in 1450 there were ships of eight or nine hundred tons. Henry VII., in 1485, built the Great Harry, which, properly speaking, may be considered as the first ship of war belonging to the Crown : it was of 1000 tons burthen, 128 feet in length, and 48 in breadth ; it had three flush decks, a forecastle, half-deck, quarter-deck, and round-house, and carried 176 guns of various calibre. This ship was accidentally burnt in 1554. The formation of a regular navy originated, however, with Henry VIII., who founded

the dock-yards at Deptford, Woolwich, and Portsmouth, and established the Trinity House, where the science of navigation was taught for the purpose of qualifying people to act as pilots along the dangerous coasts of the island. He built the *Regent*, of 1000 tons and 120 guns; and at his death there were fifty vessels of war, though the whole tonnage did not exceed 10,000. In the time of Cromwell our naval power was very formidable, and consisted of 157 ships with an average rate of 28 guns each. In the late war we had 950 king's ships of various classes.

On the destruction of the Spanish armada in 1588, a fund was established for the relief of the wounded and superannuated English mariners, which, at first, consisted of a voluntary contribution of sixpence a month from each of the sailors, out of their pay; but this was afterwards made perpetual by Elizabeth, and called the Chatham chest, from its being paid into the Hill-house at Chatham. In the year 1797 the contribution was raised to a shilling a month, from every mariner, whether in the king's or merchants' service, and in 1803 the chest was removed to Greenwich Hospital, which is stated to have been the favourite place of residence of most of our sovereigns, and particularly of the Tudors and Stuarts, from the time of Edward I. to William III., when its palace was converted into an hospital for aged and disabled seamen.

NECKLACE. Throughout the greatest part of Asia and Africa, necklaces have been commonly worn from the earliest periods to the present time, as well by men as women. The ancient Britons had them of amber, glass beads, and jet.

Necklaces or collars, considered as a mark of honour and distinction, are likewise of great antiquity. Joseph had a gold chain placed round his neck by the hands of Pharaoh, when he was invested with the government of Egypt; and the Romans frequently bestowed a golden collar on such generals

ticular and specific tune; but, in general, those that worked cures were of a very brisk and sprightly nature.

National airs, by occasioning remisciscences, have frequently a powerful effect on uncultivated minds: thus we are informed that the celebrated Swiss tune, called the Ranz des Vaches, was forbidden by the French government to be played to the Swiss troops under pain of death, as it immediately drew tears from their eyes, and occasioned them to desert, or die of what was called *la maladie du pays*, from their ardent desire to return to their native country—and there can be no doubt that the introduction of martial music previous to action, has a strong tendency to excite emulation and military enthusiasm.

NAME. Camden supposes that the names formerly given to persons were significative of some qualities or virtues they possessed, or their parents fondly hoped they might acquire, and that to imagine names were given without any meaning would be a reproach to our ancestors: accordingly, we find that Adam gave the name of Eve to his wife, because she was to be the mother of all mankind; and Porphyry remarks that the names of the ancients were very emphatical and concise.

Originally every person had but one name, which, by most nations, was given within a few days after the birth; but in order to prevent the multiplication of names, and to mark the distinction between people bearing the same name, it soon became necessary to add to it the name of the father, and hence the introduction of family or *surnames*: thus among the Hebrews Caleb is distinguished as the son of Jephthunah, and Joshua as the son of Nun; and among the Greeks, Achilles as the son of Peleus. The first trace of surnames in history, unconnected with relationship, occurs in the treaty between the Romans and Sabines, whereby, in order to consolidate the union between the two nations, it was stipulated that the Romans should add to their own names a Sabine name, and the

Sabines should in like manner adopt a Roman one, which were to be considered in future as their family or hereditary names. The Romans also were accustomed to assume new names in order to perpetuate the memory of some remarkable action or event: thus Scipio took the name of Africanus; and these different kinds of names were distinguished by them under the terms of *nomen*, *cognomen*, and *agnomen*.

The ancient Britons, according to Camden, generally took their names from colours; but these names are now lost or remain hid among the Welsh. When subdued by the Romans, they began to adopt the Roman names, some of which, though very corrupted, still remain. The Saxons introduced the German names of Edward, Oswald, &c.; and the Danes their Harold, Swayne, &c. Soon after the introduction of Christianity many assumed Hebrew names, as Matthew, Mark, Paul, John, David, Peter, &c.; and on the conquest other German names, such as William, Robert, Richard, Henry, Hugh, were introduced by the Normans. The ancient Britons, like the Hebrews, added the family to the personal name by the adjunctive noun *ap*; thus, Evan *ap* Rice, or Evan the son of Rice, which in process of time was corrupted to Evan Price; the Irish and Scots by the word *mac*, as Donal *mac* Neale; the Normans by the German word *Fitz*, as John Fitz William; and the English by the word *son*, as John, son of Richard, or John, Richard's son, which, in course of time, was converted to the surname of Richardson.

The Normans introduced the Roman custom of distinguishing their kings and some of their nobles by an *agnomen* instead of their family name: thus Edward was called Ironside, from his strength, and William II. Rufus, from the red colour of his hair; and in the time of Edward II. we meet with Adam de Gray, Adam, lord or owner of the estate of Gray; so Robert de Oiley, corrupted to Robert Doyley. It is from this alteration of names in early times, that many families who have neglected to keep up their pedigrees are at a loss to

account for the similar bearing of arms among those whose names are so widely different, while yet they might be originally descended from the same common ancestor.

NATIONAL DEBT. The commencement of the National Debt of England may be traced from the period of the Revolution, when our connections with Europe introduced a new system of foreign politics with the view of preserving what was called the balance of power on the continent. As this was attended with extraordinary expence, the expedient was adopted of anticipating the revenues of the state by borrowing sums for the current service, and laying no more taxes on the people than was sufficient to pay the interest of the sums borrowed: accordingly in the year 1695, the sum of twelve millions was borrowed from a society of merchants in the city, the interest of which, in any proportion of shares, the government undertook to discharge, and thus these shares being rendered on the faith of government readily transferable, the facility of borrowing money was in proportion to the supposed stability and resources of the government, in consequence of which a debt of a most alarming amount has been incurred, which, sooner or later, must lead to the most disastrous consequences. The following concise statement of it shews its gradual increase from its commencement to the year 1826.

In 1695	the public debt amounted to	1 million
1701	- - - - -	6 millions
1714	- - - - -	50
1739	when the war with Spain commenced	46
1749	the end of that war	78
1756	commencement of a war with France	75
1761	on the death of George I.	110
1763	the end of the war with France	146
1775	commencement of war with America	136
1794	the termination of that war	268

1794	commencement of war with France	232 millions
1796	- - - - -	300
1800	- - - - -	413
1803	- - - - -	509
1811	- - - - -	606
1814	- - - - -	717
1836	- - - - -	800

NAVIGATION. History represents the Tyrians as the first people, who had recourse to navigation as the means of increasing their commerce. Herodotus informs us that they circumnavigated the whole coast of Africa from the Red Sea to the mouths of the Nile, and founded a colony at Carthage, which, in process of time, equalled the parent state in her riches and enterprising spirit. Under the government of Hanno and Hamilcar the Carthaginians undertook voyages of discovery, and having boldly passed the straits of Gibraltar, made themselves acquainted with the European coasts and islands, and, according to some, penetrated as far as America, which they named the Island of Atlantis. On the destruction of Tyre by Alexander, which was followed by that of Carthage by Scipio, about 150, B.C., the whole emporium of commerce was concentrated in the new city of Alexandria, nor did it suffer any diminution when it became subject to the Romans, and was proclaimed the second city of the empire; but its commerce was materially injured by the erection of the eastern empire, and soon after the fall of the Roman power, was entirely extinguished by the Saracens. The art of navigation was, however, preserved at Constantinople, though principally confined to the Mediterranean sea. In the ninth century the Venetians commenced sending their fleets of merchantmen to all the ports of the Mediterranean, in which they were followed by the Genoese; and the superiority of the naval power between these rival republics was disputed till the fatal battle of Chioza, towards the end of the four-

teenth century, gave the empire of the sea and the superiority in commerce to the Venetians.

The present art of navigation dates its origin from the commencement of the fourteenth century, when the great advantages to be derived from the mariner's compass began to be properly appreciated. It is also considerably indebted to the Portuguese, and particularly to the persevering exertions of Henry, the brother of Edward, king of Portugal, who, about the year 1418, fitted out several vessels upon voyages of discovery, and laid the foundation of the science upon mathematical principles. The Portuguese have also the merit of connecting navigation with astronomy, by having first produced, in 1485, tables of the sun's declination, calculated for the use of the sailors, and instructed them in the method of finding the latitude of a place at sea, by taking the meridian altitude of the sun with an astrolabe. About the middle of the following century various modes were recommended for taking the longitude of a ship at sea, but this important and difficult operation was not brought to any satisfactory conclusion till about the middle of the last century, when accurate tables of the moon's motion were first published, and the subsequent introduction of the chronometer brought the art of navigation to its present state of perfection.

The English, however, made but little progress in the science till the time of Elizabeth, when the rich colonies which had been established by the Spaniards, Portuguese, and Dutch, naturally excited a spirit of emulation in this country, but it does not appear to have attracted the particular attention of the State till the time of Cromwell, in 1651, when the Navigation Act was passed, and confirmed by Charles II. in 1660, since which the British sailors have taken the lead of every other nation in science and enterprise.

The first person who circumnavigated the globe was Ferdinand Magellan, a Portuguese, in the year 1519: he was followed by Sir Francis Drake in 1580.

Many attempts have been made by modern navigators to discover a shorter passage into the Pacific ocean than by rounding the Cape of Good Hope, either by penetrating in a western direction through the great bays of North America, or by taking an easterly course along the northern coasts of Europe and Asia. The *north-west passage* was first attempted by Jacques Cortier, a Frenchman, who with this view explored the river Lawrence, and formed a settlement at Canada in 1534. He was followed by Sir Martin Frobisher, under the patronage of the Earl of Warwick, who entered the straits of Hudson's Bay in 1567. John Davis in 1585 proceeded as far as the straits, to which his name is given; and in 1607 Henry Hudson sailed to eighty degrees and a half, north latitude, and explored the great bay which has perpetuated his memory. This enterprising navigator, in his third attempt in 1610, to discover an outlet through the bay, was basely deserted by his crew, who mutinied and left him and eight of the sailors to perish in that inclement spot. Two years afterwards Baffin explored the straits called after him. In 1740 the Government was induced, by the representations of Mr. Dobbs, to renew their exertions to discover this wished-for passage. Captain Middleton was sent out in command of one of the Government ships, to ascertain the practicability of the design; and a reward of £30,000 was offered to the master of any ship which should effect a passage; but this proving unsuccessful, Captain Cook in 1776 was selected for another attempt, in which the usual plan of discovery was reversed, and instead of attempting a passage from the Atlantic to the Pacific Ocean, he was ordered to proceed into the Pacific Ocean, and then by the straits of Kamschatka, to enter the frozen Ocean, and to make what progress he could along the northern coasts of America; and two other ships were at the same time ordered to explore Baffin's or Hudson's Bay, and endeavour to effect a communication with him, which terminating in the same unfortunate

way, all design of making further discoveries in this quarter was laid aside till the conclusion of the late war, when the attempt was revived under those skilful and enterprising officers, Captains Ross and Parry, and with every precaution which the nature of the climate required ; the result however seems fully to justify the opinion, that no practicable communication between the Pacific and Atlantic can be effected in this direction.

The first attempt to discover a *north-east passage* to the Pacific, along the northern coasts of Europe and Asia, was made by Sir Hugh Willoughby, in 1553, when in consequence of the sudden approach of winter, he was forced to run into an obscure harbour in Russian Lapland, called Arcana Keca, where he and seventy sailors, being the crews of two of his ships, were frozen to death ; the third ship, under Richard Chancellor, succeeded in entering the White Sea, and wintered near Archangel, being the first ship that had ever been seen on that coast ; from this place he travelled by means of sledges to Moscow, where he was favourably received by the Czar John Basilowitz. In the following summer some Russian fishermen discovered the two ships in Arcana Keca, and found Middleton sitting in his cabin with his diary and other papers before him. In 1646 a Russian vessel under the command of Deshneff succeeded in forcing its way along the northern coasts of Asia from Kamtschatka to about 125° E. long. of London : but this is a solitary instance ; and as there still remains a large cape which has never been doubled, a navigable communication between the Atlantic and Pacific in a northern direction seems absolutely impossible.

About the commencement of the seventeenth century a method of *submarine navigation* was introduced by Cornelius Dabrell, who contrived to row a vessel under water in the river Thames in the presence of James I. which vessel was supplied with a certain liquor that purified the air infected by the breath of the rowers, and restored such a proportion

of vitality to it, as would make it serve again for a considerable time. Fulton, an American, some years back, constructed a boat capable of holding eight men, with provisions for twenty days, and sufficiently strong to admit of its being submersed to the depth of a hundred feet : this boat had also an apparatus to supply air for eight hours. In another of an inferior size, Fulton himself remained an hour under water, during which time he made half a league of way with his boat horizontally situated and at various depths, and succeeded in blowing up a vessel in Brest harbour, by attaching a combustible machine to its bottom ; during the late war several ineffectual attempts were by these means made to destroy British vessels off the American coast.

NAVY. With respect to the *navy of England* it may be observed, that, until the commencement of the fifteenth century, our vessels of war were almost entirely composed of merchant-ships and others, hired by the Crown ; the Cinque Ports in particular were obliged to furnish a certain number, and even the other ports sent their portion of ships, which they maintained for fifteen days at their own charge, and probably this time was considered sufficient for sending either troops or stores to the continent. The fleet which Edward III. had before Calais, in 1347, consisted of 738 ships, carrying 14,956 mariners, being, on an average, but twenty to a ship. In 1394, Hakluyt mentions an English ship of 200 tons burthen, and in 1450 there were ships of eight or nine hundred tons. Henry VII., in 1485, built the Great Harry, which, properly speaking, may be considered as the first ship of war belonging to the Crown : it was of 1000 tons burthen, 128 feet in length, and 48 in breadth ; it had three flush decks, a forecastle, half-deck, quarter-deck, and round-house, and carried 176 guns of various calibre. This ship was accidentally burnt in 1554. The formation of a regular navy originated, however, with Henry VIII., who founded

the dock-yards at Deptford, Woolwich, and Portsmouth, and established the Trinity House, where the science of navigation was taught for the purpose of qualifying people to act as pilots along the dangerous coasts of the island. He built the Regent, of 1000 tons and 120 guns; and at his death there were fifty vessels of war, though the whole tonnage did not exceed 10,000. In the time of Cromwell our naval power was very formidable, and consisted of 157 ships with an average rate of 28 guns each. In the late war we had 950 king's ships of various classes.

On the destruction of the Spanish armada in 1588, a fund was established for the relief of the wounded and superannuated English mariners, which, at first, consisted of a voluntary contribution of sixpence a month from each of the sailors, out of their pay; but this was afterwards made perpetual by Elizabeth, and called the Chatham chest, from its being paid into the Hill-house at Chatham. In the year 1797 the contribution was raised to a shilling a month, from every mariner, whether in the king's or merchants' service, and in 1803 the chest was removed to Greenwich Hospital, which is stated to have been the favourite place of residence of most of our sovereigns, and particularly of the Tudors and Stuarts, from the time of Edward I. to William III., when its palace was converted into an hospital for aged and disabled seamen.

NECKLACE. Throughout the greatest part of Asia and Africa, necklaces have been commonly worn from the earliest periods to the present time, as well by men as women. The ancient Britons had them of amber, glass beads, and jet.

Necklaces or collars, considered as a mark of honour and distinction, are likewise of great antiquity. Joseph had a gold chain placed round his neck by the hands of Pharaoh, when he was invested with the government of Egypt; and the Romans frequently bestowed a golden collar on such generals

who had promoted the glory of the empire ; hence the custom was introduced into England, and chains of gold were worn by the Saxon as well as Norman nobility, until the collar of knighthood was introduced, under the reign of Henry IV., when these chains began to be gradually disused by the nobility, and as gradually assumed by the principal officers of their establishment : at present they are considered as insignia of office of our mayors, sheriffs, and some other civil officers.

NEEDLES. The Phrygians were celebrated for their skill in embroidery and needlework, and the Hebrews held *fine needlework* in great estimation. Needles made of bronze were used by the Greeks and Romans, and several of them have been discovered in the ruins of Herculaneum. The steel needles, now in common use, are said to have been first manufactured in this country, by a native of India, about the year 1545, and that on his death the secret of making them was for some time lost, but at length recovered by a person of the name of Greening, who, under the patronage of Mr. Dormer, settled at Long Grenden, in Buckinghamshire, and established a manufactory for needles, which is still in existence.

NETS. Mention of fishing and hunting nets occurs frequently in the book of Job and other parts of Scripture ; yet it seems to be doubtful whether they were not rather gins or ~~nooses~~ made of ropes or cords. Nets, however, were certainly known to the ancient Greeks and Romans, though in what method they were made cannot be ascertained. The Romans use the phrase *texere retia*, as if they were woven, but this was probably occasioned from their having no appropriate term of art to signify knitting ; and as the meshes of the net were called *nodi*, it is evident they were made somewhat similar to those now in common use, knitting needles are noticed among the collection of Roman curiosities,

made by Gavin Hamilton, during his residence in Italy, about the year 1780.

NEWSPAPERS. It is by many asserted, that the origin of these interesting productions may be traced to the *Acta Diurna* of the Romans, alluded to by Tacitus, and which Suetonius informs us, were ordered to be published under the superintendence of the magistrates, during the consulship of Julius Caesar, and affixed on some place in the forum, for the information of the citizens. These papers, besides the proceedings of the senate, contained such other amusing and trifling topics of discourse, which the common events of a great city afford.

The antiquaries pretend to have discovered some of these documents, and state that the following, which relate to the 585th year of Rome, were published by Stephanus Pighius, in his *Annals of the Magistrates*, from papers given him by James Sisius, who had discovered them among the writings of Ludovicus Vives.

A.U.C. 585. 5th of the Kalends of April.

The Fasces with Æmilius the Consul.

The Consul crowned with laurel sacrificed at the Temple of Apollo. The Senate assembled at the *Cura Hostilia*, about the eighth hour; and a decree passed that the Prætors should give sentence according to the Edicts, which were of perpetual validity. This day M. Scapula was accused of an act of violence, before C. Bæbius, the Prætor; fifteen of the Judges were for condemning him, and thirty-three for adjourning the cause.

4th of the Kalends of April.

The Fasces with Licinius the Consul.

It thundered, and an oak was struck with lightning, on that part of Mount Palatine, called *Summa Kelia*, early in the afternoon. A fray happened in a tavern at the lower end of the Banker's-street, in which the keeper of the Hog-in-Armour tavern was dangerously wounded. Tertinius, the *Ædile*, fined

the butchers for selling meat which had not been inspected by the overseers of the markets : the fine is to be appropriated to the building of a chapel to the Temple of the Goddess Tellus.

The following *Acta Diurna* are inserted by Dodwell in his *Camdenian Lecture*.

5 Kal. September, A.U.C. 691.

Syllanus and Murena Consuls. The Fasces with Murena.

M. Tullius Cicero pleaded in defence of Cornelius Sylla, accused by Torquatus of being concerned in Cataline's conspiracy, and gained his cause by a majority of five judges ; the Tribunes of the Treasury were against the defendant. One of the Prætors advertised by an edict that he should put off his sittings for five days upon account of his daughter's marriage. C. Cæsar set out for his Government of the further Spain, having been long detained by his creditors. A report was brought to Tertinus, the Prætor, while he was trying causes at his tribunal, that his son was dead ; this was contrived by the friends of Capponius who was accused of poisoning, that the Prætor in his concern might adjourn the cause ; but that magistrate having discovered the falsity of the story, returned to his tribunal, and continued in taking information against the accused.

4th Kal. of Sept.

The funeral of Metella Piæpa, vestal, was celebrated : she was buried in the sepulchre of her ancestors in the Aurelian road. The Censors made a bargain that the temple of *Aius Loquens* should be repaired for twenty-five sesterces. Q. Hortensius harangued the people about the Censorship, and the Allabrogic war. Advice arrived from Etruria, that some of the late conspirators had begun a tumult headed by L. Sergius.

Throughout India and Persia there has been established for many centuries, a regular class of news-writers, who circulate the common occurrences of the day, and procure infor-

mation from the most distant provinces ; and most of the leading powers have news-writers or spies in pay at the different courts, and establish regular posts to convey the intelligence.

About the year 1536, we read of a periodical paper being circulated at Venice, under the name of a *Gazetta*, so called from a kind of coin there current, which was the ordinary price paid for the paper. This *Gazetta* contained much intelligence as well of Italy as of the rest of Europe ; but the Venetian Government never allowed it to be printed, and the paper continued to be distributed quarterly in manuscript, even to the middle of the last century.

The first information we have respecting any newspapers or rather pamphlets of intelligence in *England*, is a proclamation of Henry VIII., in the 36th year of his reign, A. D. 1544, for calling in and prohibiting of " certain books printed of news, &c." This proclamation states that, " the King's most excellent Majesty understanding that certain light persons, not regarding what they reported, wrote, or set forth, had caused to be imparted and divulged certain news of the prosperous successes of the King's Majesty's arms in Scotland ; wherein, although the effect of the victory were indeed true, yet the circumstances in divers points, were in some parts over slenderly, in some parts untruly, and amiss reported: His Highness therefore, not content to have any such matters of so great importance set forth, to the slander of his captains and ministers, nor to be otherwise reported than the truth was, straightly chargeth and commandeth all manner of persons into whose hands any of the said printed books shall come, immediately after they should hear of this proclamation, to bring the said books to the Lord Mayor of London, or to the Recorder, or some of the Aldermen of the city, to the intent they might suppress and burn them, upon pain that any person keeping any of the said books xxiiij hours after the making of this proclamation, should suffer

imprisonment of his body and be further punished at the King's Majesty's will and pleasure."

The first paper, which in the modern acceptation of the term, can be regularly called a newspaper, was published in this country, by order of Elizabeth, under the directions of Burleigh, for the purpose of encouraging her subjects during the expected invasion of the Spaniards. These papers or small pamphlets were printed as occasion required, under the title of the British Mercury, and three of them numbered 50, 51, and 54, are preserved in the British Museum. The first is dated the 28th July, 1588, and contains the following curious article: "Yesterday, the Scotch Ambassador had a private audience of her Majesty, and delivered a letter from the King his master, containing the most cordial assurances of adhering to her Majesties interests, and to those of the Protestant religion; and the young King said to her Majesty's Minister at his court, that all the favour he expected from the Spaniards, was the courtesy of Polyphemus to Ulysses, that he should be devoured the last." These Mercuries, which might be considered as Extraordinary Gazettes, are supposed to have been first printed in April 1588, when the Armada approached the shores of England; for after the Spanish ships had been dispersed, and all danger of the threatened invasion was over, they seldom appeared. However, this species of entertainment having been once introduced was too gratifying to the public taste, to be long neglected, and therefore in August, 1692, a weekly newspaper was established by Nathaniel Butter, at the Pye Bull, St. Austin's Gate, entitled, "The certain news of the present week;" what his success may have been, or how long he continued a publisher of news is uncertain, but he appears to have had competitors and imitators; and in Feb. 1626, a new weekly paper, being a small quarto of fourteen pages, was printed at London, under the title of Mercurius Britannicus.

In the preface to the Swedish Intelligencer, published in

1638, "now the third time revised, corrected, and augmented," we are assured that "very good use has also been made of the weekly currantoes, which if a man of judgment read, he shall find very true and very punctual: whosoever will be cunning in the places and persons of Germany, and would understand her wars, let him not despise currantoes."

When the civil wars commenced in 1639 each party set up a press for the purpose of publishing such articles of intelligence as were deemed advisable; and in August, 1642, the royalists printed at Oxford the first gazette, though it was soon afterwards discontinued, but was revived by Charles II. in November, 1665, when it was again printed at Oxford; and on the removal of the Court to London in February the following year, was continued under the name of the London Gazette.

The first newspaper that appeared in the present form was the Public Intelligencer, published by Sir Robert L'Estrange, August 31, 1681.

So late as 1696 there does not appear to have been any daily paper. In 1709 there was only one daily paper in England, called the London Courant, and eighteen weekly papers. At this period the editor of the newspaper acted as a kind of broker: thus we meet with the following notices:—"I want a cook-maid for a merchant"—"I will sell a free estate within thirty miles of London"—"If any have a place belonging to the law or otherwise, worth a thousand pounds, I can help to a customer."

In 1821 there were sixteen daily newspapers published, thirty-two weekly, and eight papers on alternate days; and the whole number of papers published in Great Britain in the course of a week, amounted to two hundred and eighty-four.

NICKEL. This metal was discovered by Hiérne, a chemist, of Sweden, who mentions it in his work, published in

1694, entitled "The Art of Discovering Metals." At first it had the name of kipper nickel, or false copper, because it was taken for an ore of copper, though none could be obtained from it.

NOTARY. The Romans had clerks, whom they called *notarii*, from their keeping minutes or notes of the transactions of the day, and of such contracts and other instruments as had been executed before them. Hence the modern notaries, whose principal employment is that of noting the non-acceptance of bills, and of translating and authenticating foreign documents.

NOVELS and ROMANCES. Mankind appear in all ages to have been partial to tales of fiction: hence the ancient philosophers, under the disguise of allegories and fables, conveyed that kind of instruction to them which, in a direct manner, they might have been little inclined to receive. There is a certain class of people in India, which probably has existed from a remote period, who are by profession story-tellers, and procure their livelihood by amusing their audience with the fertility of their invention; they also frequently form a part of the regular establishment of the wealthy. The tales of the Saracens, which are supposed to have been written in the eighth century, and known under the title of "The Arabian Nights' Entertainments," are still read with delight by all classes of people, and remain an unrivalled composition of romantic fiction. It is not improbable, that a taste for romances was first introduced into Europe by the Saracens, soon after their conquest of Spain, from whence it found its way into France and other countries, and received considerable strength during the period of the crusades. These romances were generally in rhyme, and were probably the composition of the minstrels. An excellent specimen of one is given in the *Fairie Queen* of Spenser, who

flourished during the reign of Elizabeth. About the close of the seventeenth century a more refined style of writing was introduced, and knights, dragons, and enchanted castles, were banished, for stories which, under the title of *novels*, conveyed a closer imitation of the manners of the age, and of the probable occurrences of life.

•

OATHS. The first mention of an oath in the sacred writings, is that taken by Abraham when he ratified the covenant entered into between him and Abimelech, King of Gerah—"And it came to pass at that time that Abimelech and Phicol, the chief captain of his host, spake unto Abraham, saying, God is with thee in all thou doest: now, therefore, swear unto me here, by God, that thou wilt not deal falsely with me, nor with my son, nor with my son's son; but according to the kindness that I have done unto thee, thou shalt do unto me, and to the land wherein thou hast sojourned: and Abraham said, I will swear." It is not, however, stated in what manner this oath was taken; but we find soon afterwards that when Abraham was desirous of securing a wife for his son Isaac from his native country of Mesopotamia, he called the chief servant of his house, that ruled over all that he had, and said unto him, "Put, I pray thee, thy hand under my thigh; and I will make thee swear, by the Lord, the God of heaven, and the God of the earth, that thou shalt not take a wife unto my son of the daughters of the Canaanites, among whom I dwell, but thou shalt go unto my country and to my kindred, and take a wife unto my son Isaac; and the servant put his hand under the thigh of Abraham his master, and swore to him concerning that

matter:" and thus a form seems to have been established, when the oath was to be taken by a servant to his master, or a subject to his sovereign, and probably gave rise to the feudal method of swearing homage by putting the hands between the knees, and within the hands of the Lord paramount; but amongst equals, or when the oath was to be obligatory on people of superior rank, it seems to have been the custom among the Hebrews for the juror to hold up his right hand towards heaven, which explains a passage in the one hundred and forty-fourth psalm, "Whose mouth speaketh vanity, and their right hand is a right hand of falsehood;" and although the forms of oaths, like other religious ceremonies, have varied in different countries, yet that of laying one hand on the altar, while the other was raised to heaven, seems to have been generally practised by the Greeks and Romans, Carthaginians and Germans, and even among the early Christians, though afterwards various other modes were adopted, according to the importance of the subject, and the rank of the parties interested.

Oaths are said to have been first introduced in our judicial proceedings, in the commencement of the ninth century.

Archbishop Paley is of opinion that the term *corporal oath* is borrowed from the ancient custom of swearing over the host or corpus christi, when it was customary to touch the corporale, or cloth, which covered the consecrated elements.

The coronation oath was first taken by Ethelred II. in 979.

OBSERVATORY. Most of the nations which have encouraged astronomical enquiries, boast of having established observatories by which the motions of the celestial bodies could be more accurately ascertained; for this purpose, according to some, the lofty temple of Belus and the pyramids of Egypt were erected. The earliest building however noticed as exclusively appropriated to astronomical observations is the observatory at Peking in China, said to have been

founded so early as the thirteenth century, and which was supplied with proper mathematical instruments by Father Verbiest, who had been appointed to the charge of it in 1689.

There are still the remains of some observatories constructed at Benares, Delhi, and at Jeypour in India, in the sixteenth century; the one at Delhi appears to have been a large circular building, having a number of openings or windows in the walls, and a pillar or a gnomon in its centre; each of these windows had an appropriate astronomical term, and at night the position of the heavenly bodies was defined by the window or house, in which it might be seen by a person stationed at the pillar, and during the day the time was regulated from the particular window through which the sun shone on the gnomon.

The first regular observatory in Europe was erected under the superintendence of Tycho Brahe, at Cassel, in 1561, by order of William I., landgrave of Hesse, and in 1577, the celebrated observatory, called Uraniborgh, was built for Tycho Brahe, by Frederick II. of Denmark, in the small island of Hven in the Sound. Here the motions of the celestial bodies were accurately defined, a new catalogue of the stars, which had not been attempted since the days of Hipparchus, was formed; and a method of ascertaining the longitude by the eclipses of Jupiter's satellites discovered, which for its accuracy and simplicity stands unrivalled.

Near a century, however, elapsed before the importance of fixed observatories, in promoting the science of navigation, began to be duly appreciated by the European states, and it was not till 1675, that any public measures were taken by our government for the encouragement of astronomical pursuits: in this year, however, a building was erected at Greenwich, on the scite of the ancient moated tower of Duke Humphrey, uncle to Henry VI., and received the appellation of the Royal Observatory.

Previous to the erection of observatories, it seems to have

been generally agreed upon by astronomers to consider the first meridian as passing through the island of Ferrue; but afterwards the European states assumed their first meridian from their principal cities, where they generally had an observatory established: hence in all English maps the longitude is deduced from the meridian of Greenwich, while in foreign maps, it is taken from Paris, Rome, Madrid, &c.

OIL. The fat of animals was probably used for the purposes of affording light, long before the method of extracting oil from vegetables was discovered, the period of which is, however, of great antiquity, for we find that olive oil was used in the consecration of the vessels in the tabernacle, and for the anointment of the high priest; and from many parts of the Old Testament, it is evident that oil was used as well for culinary purposes, as for that of illumination.

Oil-cloth is stated to have been first manufactured by Richard Bailey, of Ludgate-hill, in 1660.

OPERA. This species of theatrical amusement had its rise in Florence, about the close of the sixteenth century; from whence it passed into Italy and France. An English opera was introduced by Sir William Davenant, in 1656, and *Psyche* was performed in 1673; but the first musical drama attempted in England, after the manner of the Italians, was in 1707, being a translation of the Italian opera of *Arsinoe*, Queen of Naples, in which the English words were set to Italian airs; the first opera performed wholly in Italian and by Italian singers, was *Almaheide*, in 1720. Dancing was introduced about the year 1770.

Opera-glasses or telescopes, for viewing obliquely, were invented by Hevelius, in 1637.

OPIUM. The narcotic powers of this extract from the poppy were known to the Greeks, about 300 B.C., and it was

used as an opiate both by them and the Romans ; its medicinal properties, however, were not fully understood till about the middle of the seventeenth century, when Sydenham administered it in a liquid state, which, from its soothing powers and beneficial effects, received the name of *laudanum*, from the Latin, *laudare*, to praise.

ORATORIO. The origin of theatrical representations connected with Sacred History, and set to music, is by many traced to the ancient plays called Mysteries, which were common in the twelfth century ; but that particular kind of sacred music, which is occasionally exhibited at our theatres under the name of an oratorio, is so called from its having been first performed in the oratory, or chapel, of Filippo Neri, a nobleman of Florence, about the year 1550 ; and afterwards becoming fashionable throughout Europe, was introduced on the English stage during Lent, about the year 1730, at the recommendation of Handel.

ORGAN. The invention of the organ, as now constructed, is generally attributed to the modern Greeks, during the period of their first emperors, and a description of one, differing from the hydraulicon from its being blown by a bellows, and played by keys, is given in a Greek epigram in the Anthologia, attributed to the Emperor Julian, in 364, of which the following is a translation :—" I see roots of a new species, the growth of another and a brazen soil, agitated by a blast rushing from a leathern cavern beneath their roots, and producing melodious sounds, as the keys dance under the skilful fingering of a robust performer."

The first organ which has been noticed in the western part of Europe was that sent from Constantinople, by Constantine IV. as a present to King Pepin, in 757.

The period when this instrument was introduced into churches, is involved in considerable obscurity, though there

is little doubt but the Greeks set the example; we read that Lewis le Debonnaire, about the year 840, furnished the Chapel at Aix la Chapelle with an organ, which was probably procured from the East; this organ seems to have answered as a model for the manufacturing of several others by the Germans, and for the general introduction of them into the western part of Europe; for it is stated that John VIII. and his successors placed several organs made by the Germans in the Italian churches, and that the art of manufacturing them became the employment of the order of monks devoted to manual labour. William of Malmesbury, who wrote about the year 1120, informs us that St. Dunstan gave an organ to the abbey of Malmesbury during the reign of King Edgar, or about the year 965, which was made under his direction. Du Cange, on the authority of Walstan, mentions that the organ in Westminster Abbey, probably placed there by St. Dunstan, had twenty-six pair of bellows, four hundred pipes, and required seventy men to work it; from which it appears that the first organs were constructed in a very clumsy manner, nor was any material improvement made in them till about the commencement of the fifteenth century. The monastery of St. Alban's was celebrated for its organ in 1450; at which time organs were common in the abbeys and cathedrals, though they are not noticed in parish churches till the commencement of the seventeenth century. The pedals to organs were invented by Bernard in 1480; and stops were introduced about the year 1650.

Barrel or table-organs are noticed in 1680.

ORRERY. According to Desagulier, George Graham invented a machine in 1715, for Prince Eugene, which represented the annual and diurnal motions of the earth, and the synodic period of the moon; and Rowley, one of the workmen employed, from its model constructed a similar machine,

with the addition of the planetary movements, for the Earth
of Orrery, from which circumstance it was afterwards called
the Orrery.

PAGE. Until the commencement of the crusades the term "page" was commonly bestowed on all children employed in menial offices, it being derived from the Greek word, "pais," an infant; but at that period it became customary for the knights to have a youth in constant attendance, to carry part of their armour, and to be occasionally sent on messages; and as he was probably selected for his appearance, well dressed, and had the advantage of being always in good company, the term "page" became one of distinction, and children of respectable parents, under this appellation, were introduced into the establishment of all people of rank, being, while young, employed by the ladies to hold up their trains, and amuse them with their prattle, and when of a proper age, transferred to their lord, and instructed in the military exercises of those days.

PAINTING. It would be in vain to attempt tracing the origin of an art of so great an antiquity as that of painting or drawing, and which was practised by the Egyptians at a very early period of their history, and by them communicated to the Greeks. Pliny informs us that the most ancient Greek painting recorded in history, was a representation of the battle of the Magnetes, purchased, for its weight in gold, by Condaules, King of Lydia, of Bularchus, the artist, in the sixteenth Olympiad, or about 700 B. C. Zeuxis and Apelles, who flourished during the fourth and third centuries before

the Christian era, have been highly celebrated for their exquisite productions of the pencil, especially in that branch of it which may be styled portrait-painting, for it is supposed that the ancient Greeks bestowed little attention on perspective, and were but indifferently acquainted with the just distribution of light and shade, and consequently their best productions would not bear competition with the highly-finished performances of the modern Italian school.

The Romans were too much occupied in their ambitious projects, to devote much of their time to the cultivation of the liberal arts; but mention is made of Fabius, a noble Patrician, who acquired the surname of Pictor, from his having made a painting of the temple of Salus, about 300 B.C. The employment, however, was generally considered as effeminate, and even under the emperors, when Rome rioted in magnificence and luxury, and the paintings of Greece were in great request, there does not appear to have been any Roman artist, whose name was worthy of being transmitted to future ages.

Painting, when considered as uniting under that term, invention, composition, design, *chiaro obscuro*, perspective and colouring, may be fairly stated to have had its rise in Florence, under Giotto, in the commencement of the fourteenth century, and more particularly from the period of the foundation of the Academy of St. Luke's, in Florence, in 1350, which has produced some of the greatest luminaries in the art, among whom may be mentioned Leonardo di Vinci, Bonarrotti, and Raphael.

One of the most important discoveries in the modern practice of painting, was the combining of colours with oil, instead of size and water, which is attributed to John Van Eyck, a native of Brussels, in the commencement of the fifteenth century. Many, however, date it from an earlier period, and it may probably have some connection with the system of encausting adopted by the ancients for the preservation of their paintings; however this may be, it is

certain that oil as a vehicle for colour, was not generally introduced till after the death of Eyck.

Dibdin informs us that the earliest known specimen of portrait painting in Great Britain, is in the time of Richard III. : but the English appear to have been so much engaged in foreign wars and domestic troubles during the whole of the fifteenth century, that painting is scarcely noticed ; and though Henry VIII. invited over Holbein and Titian, and Charles I. Rubens and Vandyke, yet no British artist of any eminence is mentioned prior to Sir Godfrey Kneller, who commenced as portrait painter about the year 1680, and practised for five successive reigns almost without a rival.

PALACE. The term palatium was given by the Roman emperors to their residence on the Palatine Mount.

PANTOMIME. Dr. Clark states that the modern pantomime was brought to Italy from ancient Greece, that Harlequin is Mercury, the sword or wand being the substitute for the harp, and the cap the fez worn by that god on the coins of Elnos ; the Columbine, Psyche ; the Clown, Momus, (his painted face and wide mouth being taken from the ancient masks), and the Pantaloon, Charon.

PAPER. Previous to the invention of this necessary article, mankind were accustomed to record their sentiments upon various materials, such as stone, lead, skins, cotton, or linen cloth, and the bark and leaves of trees, the characters being generally cut on them by a sharp pointed instrument, as is still customary in many parts of India. Paper, so called from its having been originally made from the pith or inner filaments of the Egyptian plant, papyrus, is said to have been manufactured at Memphis, about a thousand years before the Christian era, though it was not known in Europe till some time after the conquest of Egypt by Alexander the

Great. The Romans introduced several improvements, by bleaching it to an extraordinary whiteness, and reducing it to a smooth and polished surface ; how long this kind of paper continued in use cannot be ascertained ; according to Maffei, it was not employed for the recording of public transactions after the commencement of the fifth century, while others state it was common in the tenth century. The Romans had also a method of manufacturing paper from the bark of the philura and other trees, and hence the term *liber* as well as that of *volumen*, was frequently given to their works.

The paper manufactured by the Chinese from the bark of the bamboo, is probably of equal antiquity with that made from the papyrus. Martini informs us that the Chinese, about 120, B. C., had invented a superior kind of paper, made from silk, the art of manufacturing which found its way into Persia and Arabia about the commencement of the seventh century. The Arabs, however, substituted *cotton*, the produce of their own country, in the place of silk, and thus paper made from cotton being imported into Europe, and found in many respects more convenient, and less liable to tear than that of the papyrus, became to be generally used. The most ancient specimen of this kind of paper in Europe, is a manuscript of the tenth century, in the royal library at Paris.

The kind of paper, now in common use, is made from linen rags, and is by some stated to have been first manufactured at Constantinople, and to have been brought into Spain, after the destruction of that city, by some refugee Greeks, who settled at Valencia. Others, however, with more probability, assert it to have been the invention of the Arabs, who, at an early period, introduced it into Spain, from whence, in the thirteenth century, it was carried into Germany and France. According to Prideaux, one of the earliest specimens of this description of paper is deposited in the university of Rentelm, in Germany, having the seal and signature of Adolphus, Count of Schomberg, dated 1239 ; and there is a letter from

Joinville to St. Louis, written on this paper, about the year 1260. Prideaux also assures us, that this paper was brought to England in the commencement of the fourteenth century, and that he had seen the register of some acts of John Cromden, prior of Ely, made on paper dated in 1330. In the Cotton Library there are several manuscripts on paper made from linen, which can be traced to the year 1335.

We have no means of ascertaining at what period paper was first manufactured in England; but a paper-mill was erected at Dartford, in 1588, by Spellman, a German; which probably was the first of the kind. However, the paper was of a very inferior description, till about the year 1690, when in consequence of hostilities with France, a considerable difficulty attended the importation of good paper, which necessarily led to a greater attention being paid to our own manufacture, and, now the English paper may be put in competition with any of foreign production.

Paper-hangings were first attached to walls in the stead of silk or tapestry, early in the seventeenth century; at which time also marbled or Turkish paper was manufactured in Germany.

Paper pictures and *portraits* are first noticed as having been beautifully cut by Elizabeth Pyberg, who took the likeness of William and Mary in 1699.

PARCHMENT. Dr. Prideaux is of opinion that the copy of the law which Hilkiah found in the Temple, and sent to King Josiah, was written on this material, as no other could be of so durable a nature as to last for 830 years; and both Herodotus and Diodorus state that the Persians and Ionians made use of sheep-skins and goat-skins in writing, many ages before the time of Eumènes, King of Pergamus, to whom the invention is attributed. The use of it was certainly common in Rome, and all public acts were written on parchment in England, previous to the discovery of the manufac-

ture of paper from rags. *Vellum* is probably of equal antiquity with that of parchment, yet no vellum manuscripts have been discovered prior to the sixth century.

PARISH. By some this word is derived from *Parochia*, the name formerly given to the *principal* church in every city, and originally had the same signification as a diocese, being under the jurisdiction of a bishop. Such was the case in the early ages of christianity in this island; there was then no appropriation of ecclesiastical dues to any particular church, but every man was at liberty to contribute his tithes to whatever priest or church he pleased, provided only that he did it to some, or if he made no special appropriation thereof, they were paid into the hands of the bishop, whose duty it was to distribute them amongst the clergy, and to apply them to other pious purposes, according to his discretion. Dioceses are supposed to have been first divided into parishes, about the close of the tenth century.

According to Blackstone, the boundaries of parishes were originally ascertained by those of a manor or manors, the lords of which, as christianity spread itself, began to build churches on their own demesnes, for the convenience of their tenants and retainers, directing them in return to appropriate their tithes to the maintenance of the officiating minister, instead of distributing them among the clergy of the diocese in general: this will account well enough for the frequent intermixture of parishes one with another; for if a lord had a parcel of land detached from the main of his estate, but not sufficient to form a parish of itself, it was natural for him to endow his newly erected church with the tithes of those disjointed lands: thus parishes were gradually formed, and parish-churches endowed with the tithes that arose within the circuit assigned: but some lands, either because they were in the hands of irreligious or careless owners, or were situate in forests or desert places, were never united to

any parish ; and therefore continue to this day extra-parochial, and their tithes are payable to the king instead of the bishop.

Perambulations round parochial boundaries on Holy Thursday, are of considerable antiquity, and were performed with peculiar ceremonies to perpetuate the jurisdiction of the church.

Parish-Clerks were formerly poor priests, whose business it was to officiate at the altar, and to visit the sick and sprinkle them with holy water.

Parish Settlements had their rise in the time of Richard II.

Parish Registers commenced on the suppression of monasteries.

Formerly it was the custom to assemble the parishioners by tolling the largest bell.

PARK. The Saxons had long tracts of land inclosed, which were called deer folds, or deer folds. Du Cange says the first park was built at Woodstock by Henry I., and was seven miles in circumference; or according to Shaw, it was the first park inclosed with a stone wall; some suppose it to have been intended as a menagerie for wild beasts of the forest and chase, and not for deer; yet Meserai informs us that Philip Augustus of France, having surrounded his park of Bois de Vincennes with a wall, stocked it with deer, which Henry II. of England sent to him. And therefore the supposition that deer were not common in parks prior to the fourteenth century, or to the reign of Edward III., seems to be erroneous. In the time of Charles I., a park was defined to consist of vert, venison, and inclosure; and therefore if all the deer were destroyed, it should no more be accounted a park. The word park properly signifies an enclosure, from the Latin *parcus*, but yet it is not every field or common which a gentleman pleases to surround with a wall or paling, and to stock with a herd of deer, that is thereby

constituted a legal park; for the king's grant, or at least immemorial prescription, is necessary to make it so.

PARLIAMENT. Long before the introduction of the Norman language into England, all matters of importance were debated and settled in the great councils of the realm, a practice which seems to have been universal among the northern nations, particularly among the Germans, and carried by them into all the countries of Europe which they overran at the dissolution of the Roman Empire. With us in England, this general council had been held immemorially under the several names of *Michel Synoth*, or great council; *Michel Gemote*, or great meeting; and more frequently *Wittena Gemote*, or the meeting of wise men; and instances of its meeting are recorded so early as the reign of Ina, King of the West Saxons, or the commencement of the eighth century. After the union of the Heptarchy, Alfred ordained that this *Wittena Gemote* should meet twice, or oftener in every year; and that our succeeding Saxon and Danish Monarchs held frequent councils of a similar description appear from their respective codes of laws, the titles of which usually declare them to have been enacted by the King, with the consent of his council.

William the Conqueror divided the greatest part of England among his followers, each of whom, under the title of Baron, held his lands of the King in capite, and it was part of his duty to give his advice and assistance at the public councils held at Christmas, Easter, and Whitsuntide, at which the King used also to appear in his royal robes; and we find that in Edward III.'s time, an Act of Parliament which had been passed in the reign of William the Conqueror, was pleaded in the case of the Abbey of St Edmund-Bury, and judicially allowed by the court:

How these parliaments were composed, has been matter of great dispute among our learned antiquaries. . . . Fryne, Sir

Henry Spelman, and Camden, assert, that the Commons constituted a part of the parliament in the time of the Saxons, but not by that name, or elected as consisting of knights, citizens, and burgesses. It is, however, generally agreed, that in the main the constitution of parliament, as it now stands, was marked out in the great charter granted by John, in 1215, wherein he promises to summon all archbishops, bishops, abbots, earls, and greater barons, personally, and all other tenants in chief under the crown, by the sheriff and bailiffs, to meet at a certain place, with forty days' notice, to assess aids and scutages, when necessary; and this constitution has subsisted in fact at least from the year 1266, there being still extant writs of that date, to summon knights, citizens, and burgesses, to parliament.

The word parliament was first applied to the general assemblies of the state under Louis VII. of France, about the middle of the twelfth century. The first mention of it in our statute law is in the preamble to the statute of West. 3d. Edw. I. A. D. 1278.

It is supposed that the Commons of England began to sit in a separate house, or at least give their assents separately, soon after the privilege of electing members in lieu of the lesser barons had been granted to the people; as we find that Peter de Montford was the Speaker for the Commons in the year 1260.

It is a branch of the royal prerogative that no parliament can be convened, except it is summoned by authority from the King, which is performed by the issuing of a writ out of Chancery at least forty days before it begins to sit; but to remedy the evil of discontinuing Parliaments, it was enacted by 16 Car. I. and again by 6 William and Mary, that a new Parliament shall be called within three years after the determination of the former.

Parliaments were always opened by the King in person, or if a minor, or beyond sea, by the guardian or protector of the

realm. The first time of its being opened by commission, when the Sovereign might have attended, was in the twenty-eighth of Elizabeth, in which commission it was stated, that for urgent reasons, she could not be present in her royal person.

Before any Member of the House of Commons can take his seat, he must take the oaths of supremacy, allegiance, and abjuration, both before the Lord Steward of the King's Household, and at the table of the House. Sir John Leach, who in 1620, had inadvertently taken his seat previous to being sworn, was declared to be in the situation of one not duly elected or returned.

Each House of Parliament has its own Speaker—the Speaker of the House of Lords is the Chancellor, or any person appointed by the King's commission, and if none be so appointed, the Lords may elect—an instance of which occurred in the Irish House of Lords, but till the time of Peter de Montford, the Commons had no regular Speaker, and therefore, after consultation, their manner of proceeding was to agree upon some person of great abilities to deliver their resolutions. The Speaker of the House of Commons is however now regularly chosen by the House, immediately after the Members are sworn, and when elected, he is conducted to the chair by the two Members who have moved and seconded his nomination. The mace is then placed on the table, and the House may be considered as constituted, subject only to the King's approval of the Speaker, which has always been the case, except in the year 1678, a precedent not likely to be followed. It is rather singular that Speakers, like Bishops, always affect reluctance to undertake the office, which cannot be easily accounted for, unless it be true that it was formerly the custom to buffet them when elected. Sir Richard Welgrew, 5 Rich. II., was the first Speaker who made any formal apology for inability. Sir John Bushby, 17 Rich. II., was the first Speaker presented to the King in full Parliament, by the Commons. The Commons were first

required by the King to choose a Speaker, in the second year of Henry IV. Richard Rich, 28 Henry VIII., was the first Speaker who made request for access to the King; Thomas Moyle, 34 Henry VIII., for freedom of speech; and Sir Thomas Congreve, 1 Eliz., for privilege from arrests.

Attendance in parliament was originally considered a great inconvenience and hardship, and therefore, according to Prynne, the expences of the members of the House of Commons were allowed to them so early as the 49th of Hen. III., which expences were reduced to the sums of 2s. and 4s. per day, in the 16th of Edward II., though there are some instances where a less sum was allowed. Andrew Marvell, member for Hull, in the parliament after the Restoration, was, it is said, the last member who received these wages; which were considered so burthensome, that many boroughs petitioned to be excused from sending members to parliament on account of the expence. And from the 33 of Edw. III., uniformly through the five succeeding reigns, the sheriff of Lancashire returned, that there were no cities or boroughs in his county that ought, or were used, or could, on account of their poverty, send any citizens or burgesses to parliament.

The privilege of letters coming free of postage, to and from Members of Parliament, was claimed by the House of Commons in 1660, soon after the Post Office was established, but dropped on a private assurance that it would be allowed; and accordingly a warrant used to be issued to the Postmaster General to allow the same, till at length it was expressly confirmed by Stat. 4. Geo. III.

The first instance in the English history of any of the Opposition Members being advanced on account of their influence in the House, was in the person of Sir John Saville, who, in the reign of James I. was made comptroller of the household, a privy counsellor, and soon afterwards a baron.

Parliamentary journals were first directed to be kept, at the motion of Sir Edward Sandys, in the year 1607.

With respect to the Clergy, their right or capacity of sitting in Parliament was for a long time contested, but at length by 41 Geo. III. it was enacted that no person having been ordained to the office of priest or deacon, or being a minister of the Church of Scotland, should be capable of being elected to serve in Parliament as a member of the House of Commons.

PASQUINADE. This satirical kind of libel is so named from one Pasquin, a cobbler of Rome, who was celebrated for his method of representing the actions of public or private persons, in a ludicrous or unfavourable light. Upon his decease the maimed statue of a gladiator which had been found in his house, was set up at the corner of his shop, and called after him, Pasquin; and from that time it became customary for those who indulged in satirical writings, to affix them to this figure, from whence they received the name of pasquinades, and were sometimes answered by another statue called Marfurió.

PAVING. Strabo informs us that the city of Babylon was paved in the time of Semiramis; the streets of Carthage, according to Isidore, were also paved, but the Romans had no paved streets or roads till about 180 years after the abolition of the monarchical form of government, when Appian Claudius being censor, constructed the celebrated road called after him, the Appian way. The Romans began to pave their streets about 250 B.C.

Of the modern cities, Cordova in Spain is stated to have been paved in the middle of the ninth century. The capital of France was originally called Lutitia, from the dirty state of its streets, but on orders being issued for the paving of them about the close of the twelfth century, it received the name of Paris.

All historians agree that paving was not practised in London at the end of the eleventh century, for it is related

that when the roof of Bow Church, in Cheapside, was blown off by a violent gale of wind, in 1090, four of its beams, each twenty-six feet long, were so deeply buried in the soil, that little more than four feet remained above the surface, the city of London being, as Howell observes, not only unpaved, but built on moorish ground. In the year 1346, the Poeders states, that a grant was made by Edward III. to the master of the hospital of St. Giles in the Fields, without the city of London, and to John of Holborn, to lay a toll on all carriages passing through the highway leading from the said hospital to the bar of the old temple of London; that is to Holborn Bar, and also the highway from Holborn to Charing, which roads "were so miry as to be almost impassable." However it appears, from a toll granted in 1353, for repairing the road leading from the gate of London, called Temple Bar, to the gate of the Abbey at Westminster, there was then a pavement for the convenience of pedestrians, as the grant states that, "the highway being, by the frequent passing of carts and horses carrying merchandize and provision to the said staple, became so deep and miry, and the pavement so broken and worn, as to be very dangerous both to men and carriages, and as the proprietors of houses near and leading to that staple have, by means of the said staple, greatly raised their rents, the way before these houses should at their charge be paved; and that part of the said way, where no houses are, should be paved anew, out of the said duties." In the year 1417, Henry V. directed two vessels to be employed at his expence for bringing stones for paving and mending the highway called Holborn; and other streets were paved by order of Henry VIII. In the year 1672, it was ordered by the Common Council, that thenceforward all streets within the city, known as high streets, should be paved round, or causey fashion, the kennel being in the middle. In this state they continued till 1776, when Turbeck card and slabs were first used. The present system of Mac-

Adamizing, so named from the inventor, was introduced in London, in 1824.

PAWNBROKERS. Loan banks or lending houses are of considerable antiquity ; we read that the Emperor Augustus established a fund arising from confiscated property, from which he lent money without interest to those who would deposit property of double the sum required, and Alexander Severus, for the promotion of agriculture, advanced money to the poor to purchase lands, receiving the principal only, by instalments. These examples were afterwards followed in modern Italy, and banks under the denomination of *Mounts of Piety*, were established under the auspices of the Roman Pontiff, from which for a considerable time money was advanced to the poor on sufficient security, without interest; but this kind of charity requiring a stimulus, a moderate interest was afterwards allowed, for the purpose, as declared by the Papal bull, of indemnifying the lenders from loss. From this time lending houses began to be established in most cities, and chiefly by the Lombardi or Lombards, who were the principal merchants of the middle age, and their arms, three blue balls, are to this day the common sign of a Pawnbroker's shop, though, according to the vulgar opinion, they are meant to indicate that it is two to one the things pledged are ever redeemed. Michael de Northberg, Bishop of London, in the reign of Edward III., was the first person who established a Mount of Piety, or introduced the system of pawnbroking into this country.

PEARLS. Writers upon Natural History have assumed various hypotheses as to the manner in which pearls are produced ; according to Reaumur, they are apparently the effects of disease in the fish, and are formed in the same way as stones are in animals. Olearius inform us, that the Indians for several centuries before the Christian era, had a

method of forcing shell-fish to produce pearls, by piercing them with a sharp pointed instrument, and receiving the liquor which flowed from them, in small holes made in an iron vessel, in which they hardened into real pearls. The Chinese are also said to have a method of procuring pearls from a particular kind of muscle, by causing it to swallow five or six small beads made of mother-of-pearl, which at the end of a year are found covered with a pearly crust, in such a manner that they have a perfect resemblance to real pearls.

Pearls have been used as ornaments from the earliest ages. In the time of Job pearls were accounted to be of great value.

Artificial pearls were invented by the people of Murano, being made of small glass beads, incrusting on the inside with a pearl-coloured varnish. About the middle of the seventeenth century, Janin, or Janquin, a Frenchman, discovered that the scales of the bleak had not only all the lustre of the real pearl, but that after beating them to powder in water, they returned to their former brilliancy upon drying; he therefore, by an ingenious contrivance, managed to force some of the liquid in the cavity of a small bead or grain of girasol, which is a kind of counterfeit opal made of glass, and these beads are what are now generally worn as artificial pearls.

PEDOMETER. This small instrument for measuring distances, which is carried in the fob, and by means of a catch and spring, shews the number of times the thigh is moved, or in other words, the number of steps taken, was invented by Mr. Gont, of Bunhill-row, in 1790.

PENCILS. The ancients drew their lines with leaden stiles; afterwards a mixture of lead and tin fused together was used. The mineral known under the name of plumbago is supposed to have been first employed for the purpose of drawing in the 15th century. Gesner, in his book on fossils,

written in 1565, says, that people had pencils for writing, which consisted of a wooden handle, in which was a piece of lead, called by some "English lead;" and he has given a drawing of the pencil as a matter of curiosity.

In a continuation of Aldrovendi's Natural History, by Ambrosinus, written in 1648, plumbago is mentioned under the name *lapis plumbarius*, and its use for drawing is there noticed; the figure of the pencil is also copied from Gesner which proves that black lead pencils were still uncommon. However, in 1683, John Pettus, in his Metallurgic Dictionary, printed at London, informs us under the article lead, that pencils were made, having black lead inclosed in fir or cedar.

Red and black chalk pencils were used in Germany about the middle of the 15th century. Hans Holbein drew portraits in crayons in 1540.

PENS. Reeds cut in the same manner as our pens are of great antiquity. In India, the lower classes and children write with sharp pointed instruments on the leaves of various plants. Both of these methods were common to the Romans. Pens made from quills are noticed by Isidore, who died in 636. Mabillon mentions a manuscript of the Gospels, written in the ninth century, in which the evangelists were represented with quills in their hands, which quills were called by the ancient authors "*calami*;" and it is probable that this word was employed by older writers than Isidore to signify writing pens, where, for want of other proofs, we understand reeds.

PENTAGRAPH. This instrument, for facilitating the copying of plans or prints in any proportion, was invented in 1770.

PERAMBULATOR. The Romans, in the time of their Emperors, had a method of measuring the distance of their journey by an instrument which pointed out the number of

revolutions which a wheel of the carriage had performed. In the year 1550, a degree of the meridian between Paris and Amiens, was measured by John Fennel, physician to Catherine of Medici, Queen of France, by means of a perambulator; those now in use are an improvement on the invention of Hoksfield, a Prussian, in 1748.

PERFUME. The use of perfumes was common among the Hebrews, and the Orientals in general, before it was known to the Greeks and Romans, and seems to have been at first entirely devoted to sacred offices as an incense to the gods, the anointing of the priests, or the embalming of the dead. Afterwards perfumes, such as musk, myrrh, and saffron, were carried in small boxes suspended from the neck; perfumed or scented boxes, called pouncet boxes, are noticed by Shakespeare as being used by the fops in the time of Henry IV.

PERUKE. (*See Wig.*)

PEWTER. A factitious metal, resembling silver, is stated by Whittaker, to have been invented by the Romans; but as the principal component part of pewter is tin, it most probably had its origin in this country about the commencement of the sixteenth century. During the reign of Elizabeth, pewter plates and mugs were of the value of our best plated articles, and only used occasionally: the metal was, however, common in the time of James II., who turned all the pewter vessels of the Protestants in Ireland that he could lay hold of into money, which he ordered to be current in all payments, so that creditors absconded lest they should be paid their debts.

The harder kind of metals, made of tin and brass, or copper, with antimony instead of lead, under the names of Britannia metal, plate metal, and Queen's metal, are of recent invention.

PHILOSOPHER. This title was first assumed by Pythagoras, who made it applicable to all such as sought after wisdom, in opposition to the sophists, who conceived they had no need of instruction.

PHOSPHORUS. The method of making artificial phosphorus, for the purpose of burning, was first discovered by Brandt, a citizen of Hamburg, in 1677.

PHYSICIANS. It has been already observed, that the Egyptian Thoth or Taut was the first person who established a system of medicine, which the physicians or priests were bound strictly to observe; for the priests were the only people who practised medicine, the superior order of them taking the higher branches of the profession, which consisted of astrological and magical observances, and the inferior order the more obvious method of curing by the application of medicinal herbs. The Jews considered diseases as proceeding from the wrath of an offended God, and therefore prayer and supplication was the chief means to be adopted for their removal; thus Asa, who died of a diseased foot, is reproved, because "he sought not to the Lord but to the Physicians." 2 Chron. ch. 16. . . Probably these physicians affected to cure disorders more by charms and superstitious observances, than from the medicinal properties of plants.

The Greeks are said to have acquired their medical knowledge from the Egyptians; like them the practice of it was confined to their priests, Æsculapius and others; till the time of Hippocrates, who was born about 400 B.C. and established a system of medicine which was received with implicit veneration by his successors, during a period of more than 2000 years. He was followed by Aristotle and Theophrastus, and soon afterwards a college was established at Alexandria, under the patronage of the Ptolemies, which became the chief resort of men of science from all parts of the world, and produced a succession of eminent physicians.

The Romans had no regular physicians till about 100 years before the Christian era, when it is related that Asclepiades, a native of Prusa, in Bithynia, who had studied at Alexandria and Athens, came to Rome as a teacher of rhetoric, but not finding that profession sufficiently lucrative, he suddenly turned physician, and brought himself in a short time into considerable notice; he was succeeded by Themison, of Laodicea, who introduced the custom of being attended by his pupils when he visited his patients, in allusion to which we have the epigram of Martial :

Languebam; sed tu comitatus protinus ad me
Venisti, centum, Symmache, discipulis
Centum me tetigere manus aquilone gelato
Non habui febrem, Symmache: nunc habeo!

Galen, however, who flourished under Marcus Aurelius, was the most celebrated physician among the Romans, and divided with Hippocrates the admiration of the medical world. On the destruction of the Roman Empire the science of medicine was for many ages lost, but at length was revived in the 8th century, by the Arabians, under the patronage of the Caliph Ahmansor, who had the works of several of the Greek philosophers and physicians translated into Arabic, and it is to the conquest of Spain by the Saracens we owe the re-introduction of the medical art into Europe.

About the commencement of the twelfth century, the Arabian system of medicine began to find its way from Spain into the other countries of Europe, and particularly to be studied by the monks of Salerno, near Naples, a place much frequented by the Crusaders, and which soon became highly celebrated for its medical acquirements; soon afterwards the science was regularly taught at the different Universities in Europe, and in the fourteenth century the physicians began to constitute themselves a separate body, and leave the preparation of the medicine to the dealers in herbs and drugs, who were called pigmentarii, pharmacopœi, and apothecarii.

The first mention of any regular medical practitioner in the English history is to be found in the fourth volume of the *Fœdera* for the year 1333, being a grant of no less a sum than one hundred pounds a-year, for life, to Magister Pantius de Controne, physician to Edward III., in consequence of his having been very serviceable to his parents ; and in the 1345 we meet with another grant from the same king of sixpence a-day to Counsus de Gangeland, an *apothecary* of London, for his care and attendance on him while he formerly lay sick in Scotland. Henry V.'s physician had forty marks for his annual salary, besides twelve-pence a-day whilst abroad, and his *surgeon* (*surgein*) the same allowance ; but each of them were obliged to transport a certain number of archers for the service of the war, for which they had the usual pay : and the surgeon for each of his twelve servants in surgery, had sixpence per day.

At this time a knowledge of astrology was indispensably requisite for a physician—the herbs were not to be gathered except when the sun and planets were in certain constellations, and certificates of their being so were requisite to give them reputation. In 1444 a salary of one hundred pounds a-year was given to the *magister* in medicines to the king and queen.

In 1518 Henry VIII., in order to raise the reputation of the medical profession, and to prevent people being imposed upon by bold and ignorant adventurers, incorporated several persons of the medical class into a body community and perpetual college, since called the College of Physicians.

PIGEONS. The method of conveying intelligence by these birds, which is still occasionally resorted to, is of considerable antiquity. Ovid informs us that Taurosthenes, by a pigeon stained with purple, gave notice to his father of his victory at the Olympic games. Hortius and Brutus, at the siege of Modena, held a correspondence with one another by

means of pigeons : the custom of transmitting information between Scanderoon, Aleppo and Bagdad, by means of pigeons was common in the sixteenth century, and only discontinued about sixty years ago. Carrier pigeons were also made use of at the siege of Leyden, in 1675, by whose means the place was saved, and the siege being raised the Prince of Orange ordered that the pigeons who had rendered such essential service, should be maintained at the public expence, and at their death embalmed and preserved in the Town-house as a perpetual token of gratitude.

PINS. Anderson states that before the invention of brass pins there were many pretty and ingenious contrivances for the convenience of the dress and ornament of both sexes, such as ribbons, loop-holes, laces with pearls and tags, clasps, hooks and eyes, and skewers made of brass, silver and gold ; and that from the last, skewers, it is very probable that pins naturally proceeded, being no other than smaller and more convenient and delicate skewers ; he further informs us that the first mention of the common brass pin in our Statutes is in the reign of Richard III., 1483, when the importation of them was prohibited ; we may therefore date the manufacture of them in England from this period, but they seem to have been but clumsy articles in the time of Henry VIII., as an act was passed in 1543, directing that " no person should put to sale any pinnes, but only such as shall be double-headed, and have the heads soldered fast to the shank of the pinne well smoothed, the shank well shaven, the point well and round filed, cauted and sharpened." However, about three years afterwards the present ingenious and expeditious manner of making them was invented.

PLANETARIUM. The earliest planetary machine is supposed to have been that made by Archimedes, about 900 B.C. A horologe, exhibiting some of the phenomena of the heavenly

bodies, is stated to have been made in this country, by William, abbot of Hirsham, in the eleventh century, and another by Wallingford, abbot of St. Albans, in the fourteenth century. A Planetarium on a large scale, founded on the Newtonian system, was made at Paris, by Janvier, in 1801, and is put in motion by a second pendulum clock of the best construction.

PLATE. Tyrrell, in his History of England, states, that silver dishes and other articles of plate were introduced on the tables of the Saxon nobility, in the commencement of the eighth century. John de Raby Lord Neville, in the year 1386, among other things, by his will bequeathed, four gold cups and covers, twelve dozen of silver dishes, four dozen of salts, four dozen of spoons, twenty-one silver-gilt cups, ten pots, sixteen basons (several of these with lavatories) six ewers, eight chargers, three dozen of saucers, and three pieces, or silver vessels with covers.

The art of covering inferior metals so as to give them the appearance of solid silver, was probably practised by the Romans, and originally done by covering the metal with a thin sheet of silver; afterwards a method was introduced of plating leaf-silver on copper while hot, and immediately rubbing it with a hardened steel burnisher: but this has given way to the introduction of a superior plan of plating, by combining the silver, when on the verge of fluidity, with ingots of copper, and forming the utensils out of the sheets beaten or drawn from the ingots. Gold plate is also made in a similar way, upon silver plated ingots.

PLATINA was first brought to Europe from America by Wood in 1749, and soon afterwards was ascertained to be a distinct metal by Scheffer, a chemist of Sweden. The ore is supposed to contain about eighty per cent. of the pure metal; the remainder being a mixture of other minerals, and par-

ticularly of the four new metals, iridium, osmium, rhodium, and palladium; the two former of which were discovered by Tennant in 1804, and the latter by Dr. Wollaston about the same time. Wollaston has also the merit of having first discovered a method of purifying the ore, so as to bring it into a malleable state, and thus rendering it particularly serviceable to chemists, who manufacture it into large vessels for holding muriatic and other acids.

The South American States had it in contemplation to establish a coinage of platina, which would be about four times the value of silver, and submitted their proposals to Mr. Percival Johnson, an English assayer of great eminence, who forwarded to them a medal of the size of half-a-crown for their approbation. This gentleman's platina (on account of his peculiar method of purifying it) has been in great demand as well among the chemists in foreign countries as in England; and as he has lately discovered a method of plating with it, by which the expense will be considerably diminished, there seems to be little doubt but that platina, from its quality of resisting acids, will soon be brought into general use.

PLAY. (*See Drama.*)

POOR-RATES. Formerly the maintenance of the poor was an ecclesiastical concern, and a fourth part of the tithes in every parish was set apart for that purpose; afterwards when the tithes of many parishes were appropriated to the monasteries, these societies became the principal resource of the poor, and on their abolition in 1535, an order was issued directing the inhabitants of towns to maintain their poor by voluntary contributions, but this proving insufficient, it was directed by a statute passed in 1563, "that if any parishioner shall obstinately refuse to pay reasonably towards

the relief of the said poor, or shall discourage others, then the Justices of the Peace, at their Quarter Sessions, may tax him to a reasonable weekly sum, which if he refuses to pay, they may commit him to prison; yet, where the parishes have more poor than they can relieve, the Justices may licence so many of their poor as they shall think good to beg in one or more hundreds of the respective county." However, in 1572 voluntary contributions were altogether laid aside, and an Act was passed, empowering the Justices of the Peace to lay an assessment for the relief of the poor, which assessments are supposed now to amount to the annual sum of four millions and a-half sterling.

The origin of placing *poor-boxes* in the parish churches may be dated from 1663, when in consequence of disorders and abuses which arose from the poor begging in and about the church on communion days, an order was made in the vestry books of St. Giles's parish, for a box to be placed in the church, in which all charitable donations were to be deposited. Hogarth, in one of his prints of the "Rake's Progress," has represented the inside of the old Mary-le-bonne church as furnished with one of these poor-boxes, and which the artist, to satirize the coldness of charity in that parish, has ludicrously covered with a large cobweb.

PORCELAIN. (*See China.*)

PORPHYRY. We are not acquainted with the ancient mode of cutting porphyry; the modern tools will scarcely touch it. The Italians make use of a brass saw without any teeth, and with the assistance of emery and watery rub and wear the stone with infinite patience. Cosmo de Médicis, in 1665, is said to have distilled a water from certain herbs, which gave such a hardness and temper to his tools, that his sculptor was enabled to cut the porphyry with considerable facility.

PORTER. The origin of this favourite malt liquor is thus related by the Author of the "Picture of London." "Before the year 1730, the malt liquors in general use in London, were ale, beer, and twopenny, and it was customary for the drinkers of malt liquor to call for a pint or tankard of half-and-half, that is, half of ale and half of beer, a half of ale and half of twopenny, or half of beer and half of twopenny. In course of time it also became the practice to call for a pint or tankard of three threads, meaning a third of ale, beer and twopenny, and thus the publican had the trouble to go to three casks, and turn three cocks for a pint of liquor; to avoid this inconvenience and waste, a brewer of the name of Harwood, in 1730, conceived the idea of making a liquor which should partake of the same united flavours of ale, beer and twopenny: he did so and succeeded, calling it 'Entire,' or entire butt, and as it was a very hearty and nourishing liquor, it was found very suitable to common working people, and particularly to porters, from which circumstance it obtained the name of porter."

Messrs. Meux and Co. have a cask at their brewery, in Liquorpond-street, which holds twenty thousand barrels of porter, and was four years in building; it is sixty-five feet and a half in diameter, and twenty-five feet and a half high, containing three hundred and fourteen staves of English oak, each two inches and a half thick, united by means of fifty-six iron hoops of from one to three tons each.

POST. The conveyance of dispatches by post was first adopted by Cyrus, on his Scythian expedition, about 500, B.C., for which purpose he built houses at several stations, large enough to contain a number of men and horses, and every courier on his arrival delivered his dispatches to the postmaster, who immediately forwarded them by fresh horses. There must also have been some regular mode of forwarding letters among the Greeks and Romans. Subse-

nus informs us that previous to the time of Augustus, running footmen were stationed at different places along the high roads, for the conveyance of dispatches, and that afterwards horses were employed on this service, and that chariots and other carriages were made use of for the convenience of travelling, horses being readily procured at proper stations.

There is some account of posts being established in this country so early as the reign of Edward III.: and that this method of travelling was known in the time of Henry VIII. may be inferred from an act passed in 1548, fixing the rate of post-horses at a penny a mile. A chief postmaster for England is mentioned in Camden's Annals for 1581.

An office for the conveyance of letters to and from foreign parts was erected by James I., and placed under the controul of Matthew de Questor, which, for the better accommodation of the English merchants, was confirmed and continued to William Frezill and Thomas Withering, by Charles I., in 1632. This was followed up in 1635, by the establishment of a letter office for Scotland, the horses being furnished by the post-masters at the rate of two-pence half-penny a mile. In 1642, Edward Prideaux was appointed post-master by the Parliament; and in 1649, letters were forwarded once a week into all parts of the kingdom. In 1657, a Government post-office was erected in London, and confirmed by Charles II. in 1660; some idea of its inefficiency may be formed from the circumstance that in 1678, notice is given of a new conveyance of letters, &c. by post, three times a week, within fifty miles of London, "and no money was to be required till the letters were delivered." Between the years 1730 and 1740, letters were only transmitted three times a week from London to Edinburgh, and an instance occurs of only one letter being sent by the post, which was for Sir William Pulteney, the banker.

In the year 1784 a great improvement was made in the mode of conveying letters, by forwarding them in coaches

with a guard instead of by horsemen, and the delivery was thus rendered more certain and secure.

The penny-post was set up in London and its suburbs in 1689, by an individual of the name of Murray, an upholsterer; it was afterwards claimed rather in an arbitrary manner by Government as connected with the General Post Office, but an annuity of £200 a year was granted to the assigns of Murray. This post is first noticed in the Statute books in 1710; the charge was increased to two-pence in 1801.

The revenue of the post-office in the time of Queen Anne was £60,000—it now amounts to £1,500,000.

POTATOES. This most valuable vegetable was brought into England from Virginia in America, by Hawkins, in 1563, though others attribute its introduction to the ill-fated Sir Walter Raleigh, who on his return homeward in 1623, put into an Irish port, where he landed a great number of potatoes, which being planted, multiplied exceedingly, and in the course of a few years became common both in Ireland and England.

POTTERY. The art of manufacturing vessels of clay for holding liquor was well known to the Egyptians and Hebrews, in the earliest period of their history; and there seems to be but little doubt that the Britons, like the Gauls, had a pottery of their own, though of a rude and coarse description, previous to the arrival of the Romans, by whose assistance they brought it to considerable perfection.

The principal pottery in England is at Burslem, in Staffordshire, where the soil is peculiarly suited for this manufacture, and has been employed for that purpose for at least three centuries; yet the articles manufactured were of a very inferior description till about 1690, when two ingenious Dutchmen of the name of Euler settled near Burslem, and introduced the method of glazing stone ware by casting salt into the kiln.

while hot, which at that time was considered a great improvement. No further advancement worthy of notice was made in the art till 1763, when Wedgwood, by a peculiar process of his own, astonished the people of England, by producing the most beautiful specimens of various kinds of earthenware for the table, quite new in their appearance, and covered with a rich and brilliant glaze.

PRIMOGENITURE. Gibbon says, the insolent prerogative of primogeniture was unknown among the Romans; the two sexes were placed on a just level, the sons and daughters being entitled to an equal portion of the patrimonial estate, which was also the case with the early Britons and Saxons, and gave rise to the custom of gavelkind, still preserved in some parts of our Island.

PRINTING. The honour of giving rise to this art has been claimed by the cities of Haarlem, Mentz, and Strassburgh; but it seems now to be generally allowed that the real inventor was one Laurentius, the son of John Coster, or Custos, of the cathedral of Haarlem, who commenced printing from solid blocks of wood, on which the characters were cut, about the year 1430; but afterwards he bethought himself of an improvement, by making separate wooden types or letters, which having formed into words and sentences, he attached to a form to print from. Some of these types, it is related, were stolen from him by one of his apprentices named Gensfleisch, which, serving as a model for the formation of others, enabled him to commence the business of a printer, at Mentz, in 1442, where he published "*Alexandri Galli Doctrinale*" and "*Petri Hispani Tractatus*." In 1443, Gensfleisch took John Faust into partnership, and shortly afterwards his brother Gensfleisch, of Gutenberg, who, instead of wooden, invented cast-metal types, with which the first edition of the Bible was printed, in the Latin tongue,

in 1450: Seven years afterwards a magnificent edition of the Psalter was published in the same manner, by Faust and his son-in-law, Schœffer, which Psalter is the earliest book known to have a genuine date, and is lodged in the Imperial Library at Vienna: This Peter Schœffer, in 1458, invented a mode of casting the types in matrices, instead of cutting them, which was deemed so important a discovery, that the people employed by Faust and Schœffer were bound by an oath not to reveal the secret; and it consequently remained unknown till the sacking of Mentz by the Archbishop Adolphus, in 1462. The first book printed by these improved types was "Durandi Rationale Divinorum Officiorum," 1459, and which was lately in the library of the Earl of Pembroke.

It appears that Gensfleisch Güttenburgh, previous to his partnership with his brother and Faust, had unsuccessfully attempted to establish a printing concern at Strasburgh, for which reason this city, together with Mentz, has assumed to itself the merit of having given rise to the invention, but there is no certain proof of any book being printed there before 1462.

The house in which Laurentius Costor resided at Haderlem is still to be seen, and the first book he printed, entitled the "Speculum Salutis," which consists of a variety of pictures, representing some of the most remarkable occurrences in the Bible; with some of the verses underneath, is preserved in a silver case in the Town House, and is shewn with great veneration as a most valuable relic. Each page is printed from a single block of wood; in the same manner as a wooden cut: Laurentius died in 1440.

Through the efforts of Thomas Bouchier, Archbishop of Canterbury, R. Tournour, Master of the Robes, and William Caxton, merchant, were sent to Haderlem, to be instructed in the art of printing, and these having prevailed upon one Consellis, an under workman, to accompany them privately to England, set up a press at Oxford, in 1477, but the first book

known to have been printed there is only dated in 1468, being a small volume in quarto, consisting of forty-one leaves, and entitled "*Expositio Sancti Jeronimi in Symbolum Apostolorum ad Papam Laurentium*;" and at the end are the following words: "*Impressa Oxoniz et Finita. Anno Domini MCCCCLXVIII, xvii die Decembris.*" This book was printed with separate cut types in wood, being the only method Consellis had acquired at Haerlem. A press was afterwards established by Caxton, at St. Albans, and another in the almonry or eleemosynary adjoining to Westminster-abbey, in 1471, in which fusile types were first introduced. A book on the game of chess, printed in 1474, may be regarded as the first production of the English press in this country, though the first book published in the English tongue, was the *Recuyell of the History of Troy*, printed at Cologne, Sept. 19, 1471.

Books were originally made to resemble manuscripts, and printed only on one side of the vellum or parchment; the method of printing on both pages being not then discovered, therefore the blank sides were pasted together, which made them appear like one leaf. Books printed after this fashion may be seen in his Majesty's library. Another imperfection during the infancy of the art was the want of capital letters, which induced the printers to leave the places of the initial letters commencing the chapter vacant, in order that the illuminers might paint them in gold or azure; though others say this was done designedly, that the work might bear the greater resemblance to a manuscript; and we are informed that Faust having taken a parcel of his books to Paris, and offered them for sale as manuscripts, was actually indicted, or threatened to be so, as a conjuror; for, from the number of the copies, and their exact conformity with one another, even to a point, the Parisians concluded he must have been assisted by supernatural agency—and thus we have the origin of the popular story of Dr. Faustus.

The first letters used by Caxton were of the sort called

"secretary;" afterwards his letters resembled the Gothic characters of the fifteenth century, of which he had fonts of great primer, pica, double-pica, and long-primer. In 1518 a book in the Roman character was printed by Pynson.

From the above statement it appears that printing was originally performed by means of wooden blocks, with which mode the Chinese, according to Father Couplet, were acquainted so early as the commencement of the tenth century, yet as there was no commerce or correspondence between Europe and China, till after the introduction of printing in Europe, it is impossible that the Europeans could have borrowed their system from the Chinese, but each must have fallen upon the same method, though at different times; it is stated, however, that the common playing cards which were at first painted, were about the year 1400 printed from wooden blocks, and it is not improbable that Castor might have availed himself of this hint in the formation of his wooden types.

The printing press, at a very early period of the art, was brought to a degree of perfection which has not admitted of any very material improvements, till the present age; who first invented it is not known, but it is supposed to have been greatly improved by William Jansen Blaew, of Amsterdam, in 1580. The one now commonly used is on the principle of the Earl of Stanhope's, invented in 1780, but in printing of newspapers, or in any very extensive concern, it is worked by the aid of steam.

The ancient method of printing whole pages at once, from characters cut in solid blocks, has received the modern appellation of *stereotype*, and was revived by Vanders May, a native of Leyden, about the end of the sixteenth century, who printed a bible from cast plates, but the process being found more expensive than the common mode of printing, was soon laid aside. It was, however, revived by Gad, a jeweller, of Edinburgh, in 1725; by Tilloch, in 1780; and by Wilson, in

1800; and at present the stereotype art is adopted at both the Universities, and thousands of bibles issue annually from their presses printed on that plan.

For other information respecting printing, see the articles *Engraving* and *Book*.

PSALMODY. Under the head *Church-music*, it has been noticed, that singing constituted a prominent part of every religion from the most remote period, and particularly among the Jews and early Christians. The choral service was introduced into the Cathedral Church of Canterbury, by St. Austin and his followers; and soon after the arrival of Theodore spread over the whole kingdom, and prevailed generally through all the European churches, till the period of the Reformation; sometime prior to which, part of the psalms of David had been formed into verse, for the use of the common people, by John Huss and Jerome of Prague, and this example was followed by Clement Marat, a French poet, in 1540. Calvin, in the establishment of his church at Geneva, introduced the plain metrical psalmody now in general use among the reformed churches; for which purpose he availed himself of Marat's version of the Psalms, and employed a musician to set them to easy tunes; these psalms were afterwards divided into pauses or small portions, and included in the Geneva prayer-books; from which time the Catholics, who had been accustomed to sing them, were prohibited doing so by their priests, under a severe penalty.

It was owing to the Reformation, and to our communication with foreign Protestants, that metrical psalmody was introduced into England. Several of the psalms had been translated into English metre by Sir Thomas Wyatt about the close of Henry VIII.'s reign; but the custom of singing them in the church did not commence till about the year 1549, when the first edition of Sternhold's fifty-one psalms appeared;

afterwards a second edition was published in 1553, dedicated to Edward VI.; but the entire version of the psalms was not printed till 1561. In the following year another edition was published, with the assistance of Hopkins, entitled "The whole Book of the Psalms, collected into English by T. Sternhold, J. Hopkins, and others; composed with the Ebrue, with apt notes to sing them withal;" and though this version now appears coarse and despicable, it was in those days equally refined with the practical taste of the most polite courtiers and polished scholars of the nation; and they were sometimes sung at Paul's Cross by upwards of six thousand people at once,—the practice being for the clerk to repeat each line three times, that the congregation might join in the service.

Queen Mary laboured much to re-establish the service of the Roman church, but her reign was too short for the purpose, and on the accession of Elizabeth to the throne, the book of Common Prayer, in which Sternhold's psalms had been set to music by Matbecke, in 1549, was considered as the general formula of church service, and has so continued with little alteration to the present time.

PULPIT. The modern reading-desks and pulpits have been generally substituted instead of the ancient ambos, though in some churches remains of the ambos are still seen. The ambo was ascended by steps, which occasioned that part of the office performed there to be called the gradual; the gospel being read at the top of the ambo, and the epistle a step lower. The sermon was generally preached from the steps of the altar. Pulpits were introduced about the commencement of the thirteenth century; and were originally erected facing the west, that the people in all acts of devotion might look towards the east: the change to the south, being a reform of the Puritans, first took place in the chapel of Emanuel College, Cambridge, built by Sir Walter Mildmay.

These pulpits had an hour-glass attached to them, a stand for which is to be seen in those of ancient construction : scarlet cushions and linings are ancient.

PUMP. This hydraulic machine is said to have been invented by Ctesibius, of Alexandria, about 120 B.C. ; but on what principle it was constructed is not ascertained. The date of the invention in modern times, is the commencement of the fifteenth century. The rise of the water in the pump was long supposed to be occasioned from the horror that nature had of a vacuum, nor was the true reason discovered till the middle of the seventeenth century, when the important experiments of Torricelli proved that it originated from the pressure of the atmosphere.

PUNCTUATION. It seems to be the general opinion, that the ancients were not acquainted with the use of any arbitrary marks to assist the reader in ascertaining the sense of the author, but that he was left to discover it from the general tenor of the subject ; for Quintilian, who treats on all the minute parts of grammar, makes no mention of punctuation,—yet there are some who ascribe the invention of pointing to Thrasy-machus, who was contemporary with Plato, or to Aristophanes, the grammarian of Byzantium, about 200 B.C. The earliest printed books had no stops, but some arbitrary marks here and there, according to the humour of the printer : however, the comma, the parenthesis, the interrogation, and the full-point, appear about the commencement of the sixteenth century ; the colon is noticed in the middle, and the semicolon about the close of that century ; the note of admiration, which appeared about the middle of the seventeenth century, is the last in the order of punctuation that has been noticed.

PYROMETER. This instrument for measuring the alter-

ation in the dimension of metals and other solid bodies, when heated, was invented by Muschenbrock, in 1730.

PYROTECHNY. (*See Fireworks.*)

QUADRANT. The first astronomical instrument recorded in history was the astrolabe, or armillary sphere, invented by Hipparchus, about 160 B. C., and which is said to have been calculated not only for taking observations, but for illustrating the heavenly motions when ascertained. About 300 years afterwards, Claudius Ptolomeus, commonly called Ptolemy, invented a portable instrument for taking the altitude of celestial objects, which he named the *astrolabikon organon* : it was somewhat similar to our graduated ring-dial, having a diametrical bar turning on a pin in the centre, with a sight or vane at each end, so that when the astrolabe was properly suspended, by observing the sun through these vanes, its altitude would be immediately shewn on the graduated limb. This ingenious instrument was for several centuries the only one made use of by astronomers ; for as to the quadrant said to have been used by Ptolemy, it was in every respect so inferior to the astrolabe, in point of accuracy and utility, that it is not likely to have been the invention of so eminent an astronomer and mathematician : and we find that the astrolabe was in common use even in the time of Copernicus, and, probably, to that instrument we are indebted for his system of astronomy. However, as the science of astronomy advanced, the observations made by the astrolabe were not of a nature to satisfy the wishes of astronomers, not only because the radius, unassisted with optical glasses, was too small to give the angle with sufficient minuteness and accu-

easy, but because the instrument was liable to lose its vertical position at the time of observation. In order, therefore, to increase the radius, a method was adopted of making use only of a portion of the circle, and as the greatest altitude could not exceed ninety degrees, one-fourth of a circle, or a quadrant, was deemed sufficient for that purpose.

The first quadrant of which we have any certain information, was the one constructed by Copernicus, at Thorn, in Prussia, about the year 1510, the radius of which was equal to four cubits.

About the close of the sixteenth century, nautical astronomy began to be generally cultivated, and quadrants and back-staffs of various dimensions and on various principles were constructed, among which was one made by Captain John Davis, in 1590, which was called the English quadrant, and from its being constructed on a principle that did not require the plumb-line, was the only one applicable to nautical purposes.

The most important improvement in the nautical quadrant was the addition of double reflecting mirrors, by Sir Isaac Newton, in 1670, by means of which the reflected image of the sun is brought down to the horizon, and its altitude accurately shown by the index, and the angular distance of two celestial bodies may also be taken by covering the observed object with the reflected image of the other, but it does not appear that this quadrant, which was made for Dr. Halley, was ever brought into use for nautical purposes, so that when Hadley's instrument, which was constructed on a similar principle, was submitted to the Royal Society in 1742, he was by many considered as the inventor.

QUAKERS. This sect of Christians owe their origin to George Fox, a shoemaker at Droyton, in Leicestershire, who commenced preaching in 1624. Their first annual meeting was held at Skipton, in Yorkshire, in 1650.

QUADRANT. The first astronomical instrument recorded in history was the astrolabe, or armillary sphere, invented by Hipparchus, about 160 B. C., and which is said to have been calculated not only for taking observations, but for illustrating the heavenly motions when ascertained. About 300 years afterwards, Claudius Ptolomeus, commonly called Ptolemy, invented a portable instrument for taking the altitude of celestial objects, which he named the *astrolabikon organon* : it was somewhat similar to our graduated ring-dial, having a diametrical bar turning on a pin in the centre, with a sight or vane at each end, so that when the astrolabe was properly suspended, by observing the sun through these vanes, its altitude would be immediately shewn on the graduated limb. This ingenious instrument was for several centuries the only one made use of by astronomers ; for as to the quadrant said to have been used by Ptolemy, it was in every respect so inferior to the astrolabe, in point of accuracy and utility, that it is not likely to have been the invention of so eminent an astronomer and mathematician : and we find that the astrolabe was in common use even in the time of Copernicus, and, probably, to that instrument we are indebted for his system of astronomy. However, as the science of astronomy advanced, the observations made by the astrolabe were not of a nature to satisfy the wishes of astronomers, not only because the radius, unassisted with optical glasses, was too small to give the angle with sufficient minuteness and accu-

easy, but because the instrument was liable to lose its vertical position at the time of observation. In order, therefore, to increase the radius, a method was adopted of making use only of a portion of the circle, and as the greatest altitude could not exceed ninety degrees, one-fourth of a circle, or a quadrant, was deemed sufficient for that purpose.

The first quadrant of which we have any certain information, was the one constructed by Gopertius, at Thorn, in Prussia, about the year 1510, the radius of which was equal to four cubits.

About the close of the sixteenth century, nautical astronomy began to be generally cultivated, and quadrants and back-staffs of various dimensions, and on various principles, were constructed, among which was one made by Captain John Davis, in 1590, which was called the English quadrant, and from its being constructed on a principle that did not require the plumb-line, was the only one applicable to nautical purposes.

The most important improvement in the nautical quadrant was the addition of double reflecting mirrors, by Sir Isaac Newton, in 1670, by means of which the reflected image of the sun is brought down to the horizon, and its altitude accurately shown by the index, and the angular distance of two celestial bodies may also be taken by covering the observed object with the reflected image of the other, but it does not appear that this quadrant, which was made for Dr. Halley, was ever brought into use for nautical purposes, so that when Hadley's instrument, which was constructed on a similar principle, was submitted to the Royal Society, in 1743, he was by many considered as the inventor.

QUAKERS. This sect of Christians owe their origin to George Fox, a shoemaker at Droyton, in Leicestershire, who commenced preaching in 1694. Their first annual meeting was held at Skipton, in Yorkshire, in 1696.

RACES. (*See Horse-racing.*)

RAILWAYS. Wooden rails or planks were first laid down and imbedded on dilapidated roads, to facilitate the conveyance of coals in waggons, from the mines to the wharfs, about the middle of the seventeenth century. These roads were afterwards improved by making ledges to confine the carriages to a certain track. Cast-iron rails on the same principle were introduced in 1738, and their utility in saving horse-labour became so apparent, that they were soon brought into use for connecting canals with each other, and for other purposes of traffic.

RHYME. The verses of the ancients were regulated by the peculiar position of words, whose syllables being long or short, formed the number of feet required. But about the decline of the Roman empire, the modern Greeks and Romans affected a certain cadence of periods, by which a similitude of sound was preserved between the terminating words of two contiguous lines, and which affectation increased as the purity of the Latin tongue declined, so that it became very common among the later authors. The French and English adopted this cadence of rhyme, which was much in vogue in the twelfth century, under the denomination of Leonine verses, from a French author of the name of Leoninus, who was celebrated for his poetical compositions.

RIBBAND. In order to encourage our own manufactures, the importation of silk ribbands was expressly prohibited by a statute passed in 1482, which necessarily infers that they must have been common at that period. The ribband-loom first appeared at Dantzic, in 1586, and the inventor is said to have been strangled, lest the general introduction of it should occasion distress among the lower classes of people, who gained their livelihood by weaving. For the same reason it was prohibited in Holland, in 1623. It is first noticed in England in 1676, and in 1690, figured ribbands came into fashion, which were at first made by being pressed on ornamented steel plates, but afterwards by being passed between steel cylinders, having the figure intended to be represented engraven upon them.

RING. The introduction of this little personal ornament is of great antiquity, being common among the ancient Egyptians and Hebrews. Pliny informs us that the Sabines had rings in the time of Romulus, which fashion they had probably adopted from the Greeks, and that they were worn by the Romans in the time of Numa, being made chiefly of iron, till about the third century before the Christian era, when rings of gold, according to Livy, were common: but Pliny states that Marius was the first person who wore a gold ring, during his third consulate, about 100 B. C.

The Britons wore rings on their fingers, previous to the Roman invasion.

The ring was in general the emblem of fidelity; hence its ancient use in many functions and distinctions: during the middle ages it was often received as the credential of a mission.

The bishop's ring, by which he was wedded to the church, was very early deemed a necessary part of the pontifical apparatus. The fourth council of Toledo, held in 633, appoints that a bishop condemned by one council, and found innocent

by answer, should be restored by giving him his ring and staff, &c.

WEDDING-RINGS are supposed to have originated with the Jews, and the custom to have been adopted by the first Christians. The wearing the ring on the fourth finger was common to the Greeks, because, as Aul. Gellius informs us, they had discovered from anatomy that this finger had a little nerve that went straight to the heart, and therefore they reckoned it the most honourable from its being connected with that noble part.

ROADS, Public. (See *Highways*.)

ROPE. (See *Cordage*.)

RUFFS. This part of the ladies' dress came into fashion about the middle of the sixteenth century, and was borrowed from the men, who had worn them for a considerable time. Both sexes became now anxious to outdo each other in the size of them.

RUSSET. A coarse sort of grey cloth, in common use among the religious orders and poorer class of people, in the thirteenth century.

SADDLE. According to Pliny, Pelethorius first introduced saddles or rather coverings for horses; others attribute the invention to the Salii;—from whence the Latin "*sella*," a saddle; yet neither the ancient Greeks nor Romans were acquainted with it. In the time of Cæsar it was common to have cloaths or housings thrown over the horse, after the manner of the Persians, and fastened by a girth or surengle. Saddles made of wood, rising both before and behind, appear about the commencement of the fourth century. In the Theodosian code, published about the year 385, there is a rescript, which directs that the weight of a saddle and bridle for post-horses, should not, together, exceed sixty pounds.

According to Whitaker, the saddle was introduced into this country by the Romans; and under the Saxons the form of it differed but little from that now used by the cavalry: it was generally covered with cloth instead of leather, and was frequently enriched with jewels.

Stout says that the Saxon and Norman ladies, whenever they are represented on horse-back, are seated side ways upon the horse, according to the present custom; others assert that the side-saddle was introduced by Anne, daughter of the King of Bohemia, and Queen of Richard II. We are informed that Queen Elizabeth rode from London to Exeter on a pillion, behind the Lord Chancellor; and this method of travelling was common among ladies till the middle of the

last century, and is still practised in various parts of the kingdom.

No mention is made of the stirrup in any ancient Latin or Greek authors, nor is any figure resembling it to be seen in any ancient statue or monument. Galen, in several places, remarks that the Roman cavalry in his time were subject to diseases of the hips and legs, for want of having their feet sustained on horseback ; and Hippocrates, long before him, had noticed that the Scythians, who were much on horseback, were frequently troubled with defluxions in their legs, because of their hanging down. The first allusion to stirrups is to be found under the term *scalæ*, in a book written by the Emperor Mauritius in the sixth century, though several years elapsed before they were brought into general use.

According to Strutt, the stirrup was introduced into England by the Saxons, who had them attached to their saddles, as now : stirrups, as well as spurs, appear on seals in the eleventh century. Footed stirrups occur in the reign of Henry IV.

SALT. This useful mineral which is naturally produced in great abundance in hot climates, was in the early ages of the world regarded as a symbol of extreme sterility, and the Egyptians in particular held it in the greatest abhorrence ; hence we find that Lot's wife about 1900 B.C. was turned into a pillar of salt, which, from a passage in Deuteronomy, ch. XXIX. v. 23. was considered as a proof of the barrenness to which the country was to be devoted, "that the whole land thereof is brimstone, and salt, and burning, that it is not sown, nor beareth, nor any grass groweth therein, like the overthrow of Sodom and Gomorrah ;" and when Abimelech took Shechem, "he beat down the city, and sowed it with salt."

Salt was nevertheless used at a very early period for culinary purposes, and to give an agreeable flavour to food ; it was therefore considered as a symbol of hospitality, and to this

day it is a common expression among the nations of the East, to say, "I eat such an one's salt," for "I am fed or maintained by him."

Herodotus, Strabo, Arian, and others, speak of rock salt as being dug up in various parts of Africa. Pliny relates that a piece of it, which, when in the pit, was very light, became much heavier on exposure to the atmosphere, and that this salt could be split or broken into smooth pieces, and was very transparent.

Salt was imported into this country by the Phœnicians, prior to the arrival of the Romans, who instructed the Britons in the method of manufacturing or procuring it. The salt springs at Droitwich, in Worcestershire, are noticed in the year 816, yet for several centuries afterwards, the art of making salt was very imperfectly understood. Henry VI. invited several people from Zealand and other parts of the Low Countries, to instruct his subjects in the art of manufacturing it; salt mines were discovered in Staffordshire in 1670.

Salt was used as a manure in Cornwall, so early as the time of Henry III., but its general introduction into husbandry, as well as for the fattening of animals, had its rise about the close of the last century.

SALTPETRE. This substance, which is spontaneously produced from the soil of many countries in Europe, especially Spain, on the discovery of gunpowder, became an object of considerable political importance. Various methods were resorted to for extracting it from different substances, and regular associations or companies, with extensive privileges, were incorporated for that purpose at Paris, about the close of the sixteenth century, and in England in the time of James I.

SARCENET. This kind of silk was worn by the ladies in

the thirteenth century. Chaucer describes *Largesse* as being clothed in a splendid robe of purple-saracenot.

SATIN. This species of silken stuff is also noticed by the writers of the thirteenth century, though the high price of it necessarily prevented its being brought into general use.

SAW. The Greeks attributed the invention of this instrument to Icarus, who took the hint from the back-bone of a fish. By a painting which has been rescued from the ruins of Herculaneum, it appears that the saws of the Greeks were similar to those now used.

Saw-mills are said to have been erected in Germany in the fourth, though most probably mistaken for the fourteenth century, for they were considered as rare in the commencement of the fifteenth. Anderson states that "in 1638 a Dutchman erected a wind saw-mill or engine for sawing of timber on the river Thames, opposite Durham-yard in the Strand, London; by which machine, with the self-attendance of one man and one boy, as much work was sawed as twenty men can perform in the usual way; but this method was afterwards put down, lest our labouring people should want employment."

SCARLET. (*See Cochineal.*)

SCYPTRE. This ensign of royalty is of greater antiquity than the crown; ornamented golden sceptres are mentioned by Homer. Tarquin the elder was the first among the Romans who assumed the sceptre, which custom was continued by the Consuls and Emperors. Phocas, A.D. 600, added a cross to it; both the sceptre, and verge for the left hand, were used by the Anglo-Saxon Kings.

SCHOOL. The first school established in England for the

study of the classics and arithmetic, was at Cralkdale, in Wiltshire, in 669.

SEAL. We read of seals, or engraved gems, being attached to rings almost as early as of rings themselves, and that they were used to authenticate writings, appears from the circumstance of Jezebel's affixing the seal of Ahab to the document authorizing the death of Naboth. Pliny however informs us, that in his time seals were not used any where except in the Roman empire, and then only by private persons, neither does it appear that any of the public edicts or instruments of the Romans were sealed, even in the time of the Emperors. Seals as distinct from rings are not noticed till the commencement of the ninth century.

The Anglo-Saxons were accustomed to subscribe their names to instruments of importance, and such of them as could not write affixed the sign of the cross, which practice is still resorted to in the present day; but the Normans, who were a brave, though illiterate people, at their first settlement in France, adopted the practice of sealing only, without the addition of their names; and which custom continued long after learning had made a considerable progress among them: hence the charter of Edward the Confessor to Westminster, himself being educated in Normandy, was witnessed only by his seal, and this is generally thought to be the oldest sealed charter in England.

Seals are however noticed in the manuscript history of Offa, and it is said that, the genuine charters of Offa and Ethelwolf, sealed with their seals representing their portraits was formerly to be seen in the Abbey of St. Denis, Paris. The former visited Rome about the year 790, where he founded a college for the education of the Saxon youth, and subjected England to a tax called Peter pence, from its being collected on the festival of St. Peter ad Vincula, for its support: this grant was confirmed by Ethelwolf, when he visited

Rome in 847, and these probably are the charters above alluded to.

At the Conquest, the Normans introduced their own customs into this country, and among others, that of waxen seals, instead of the English method of signature, (which was not again resorted to till about the close of the fourteenth century). These seals were distinguished by various devices, according to the fancy of the owner, those most common were a dove, cross, anchor, &c., sometimes a knight on horseback, but the seals of kings had always their portraits. *Coats of arms* were not engraved on seals, nor indeed used at all till the period of the Crusades, or about the commencement of the twelfth century, when they were first assumed and painted on the *shields* of the knights, to distinguish them, when clad in complete steel, from each other. The first seal which has been noticed as having armorial bearings, was one belonging to King John, when he was Earl of Morton.

The privy, as well as the public or Great Seal of England, was introduced by Edward the Confessor.

Impressions from seals seem originally to have been made upon metal, generally on lead, but sometimes on silver and gold, according to the nature of the grant and the dignity of the parties concerned in it. The Romans, also used a kind of bitumen brought from Asia, which they called *terra sigillaris*: wax also was early resorted to for taking the impressions of seals. Grants from the Crown, and from some corporate bodies, are still made by having the large waxen seal attached to them.

The custom of sealing common letters with wax had its rise in the sixteenth century, and it is said that a wax prepared from gum-lac, was known to the Germans about the year 1550, but the present kind of sealing wax is supposed to have been invented in Paris, in 1630.

SECRETARIES OF STATE. Formerly the King's Se-

cretaries were stiled clerks and notaries, afterwards clerks of the *secret*, hence the word *secretary*, and at length Secretaries of the Commands. At the ratification of a treaty of peace between France and Spain, in 1559, the Spanish Ministers assumed the title of Secretaries of State, which has since been adopted by the Ministers of other nations.

SHIELD. This defensive species of armour is the most ancient of any recorded, and was originally made of basket-work covered with leather or metal.

Among the Greeks and Romans, the shield was not only necessary for the defence of the body, but was considered as a badge of honour to the wearer, and it was therefore disgraceful to return from battle without it.

Most of the ancient knights were armed with triangular shields a little convex, which form gradually gave place to those of a circular or oval figure, or to square ones rounded and pointed at the bottom. These shields had on the inside two or more loops of leather, through which the arm and hand were passed when prepared for action; at other times they were carried by a leathern thong worn round the neck.

Shields or bucklers were occasionally used in the time of Elizabeth; many of those with which the Spaniards were armed on their invasion of this country, had small pistols in the centre.

SHIP. Mythologists relate, that Argus, assisted by Minerva, constructed the first ship from timber procured from the sacred grove of Dodona, consecrated to Jupiter, from which circumstance it was consulted as oracular, and gave verbal responses. This ship was built about 1260 B.C., and was named the Argo. The Phoenicians, however, had ships three hundred years before this period, for we find that the patriarch Jacob, in blessing his son Zebulun, alludes to the commerce at that time carried on by the Phoenicians in their ships.

The Romans had no regular naval establishment till after the first Punic war, or about 250 B.C.

According to *Livy*, *fire-ships* were invented by the Rhodians, and used by the Romans in an engagement with the Syrians, about 190 B.C.; they were first introduced in our navy to destroy the invincible armada, in 1588.

SHOE. The Egyptians and Hebrews had some protection for their feet in the time of Abram, for we read that the Patriarch refused to take even as much as a shoe-latchet from the King of Sodom, "lest he should say he had made Abram rich."

Xenophon relates that the ten thousand Greeks who had followed the young Cyrus, wanting shoes in their retreat, were forced to cover their feet with raw skins, which occasioned them great inconveniences.

The Roman emperors, like the Persians, wore shoes, enriched with jewels, and embroidered with gold and silver.

In England shoes were worn by the lowest class of the people in the eighth century, being made nearly in the same form as at present, without the appearance of any aperture further than was barely necessary for the insertion of the foot; but till the eleventh century the greatest princes in Europe had but wooden soles to their shoes. In 1382 shoes were worn with such long points or beaks to them, that it was common to fasten them to the knees by a silver chain.

SHOE-Buckles. (*See Buckles*)

SIGNS. Besides the custom of attaching signs to inns and public-houses, which may be traced to the Romans, it was common during the middle ages for every shop to have its peculiar sign suspended in the street, and this by obstructing the free circulation of the air, is supposed to have been one of the causes of the frequent epidemical disorders in London.

SILK. Though cloths of silk are mentioned in several parts of the Old Testament, yet it seems to be now the general opinion that the translators have given a wrong interpretation to the Hebrew text, and that silk was really unknown to the ancient Hebrews.

The ancients assert, that the art of manufacturing silk was invented in the Isle of Cos, by Pamphila, the daughter of Platis; the thread being produced from an insect, called Ser, bred for this purpose by the Seres, a people of Scythia, whom we now call the Chinese.

Others again state, that the Greeks of Alexander the Great's army, were the first who brought wrought silk from Persia into Greece, about three hundred and twenty-three years before Christ, and that a manufacture of it was established at Berytus and Tyre, in Phœnicia, from whence it was dispersed over the west: it appears, however, that the Greeks for many ages afterwards, were ignorant of the manner in which it was produced, or in which way it was manufactured.

Some maintain that silk was known to the Romans in the time of the Emperor Tiberius about A. D. 90; yet we are informed it was extremely scarce under Heliogabalus in the commencement of the third century, and that he was the first person who wore a garment wholly made of it; and Aurelian, who died in the year 275, is said to have refused his wife a suit of silk, on account of its great price.

At length about the middle of the sixth century, when Justinian was Emperor, two monks who had long resided in China, and were fully acquainted with the mode of preparing and manufacturing silk, concealed in a hollow cane the eggs of the silk worm, and brought them in safety to Constantinople. At a proper season the eggs were hatched, and the Greeks were instructed in the method of rearing and feeding the worms, and of preparing the silk for the loom. In the succeeding reign, the manufacture of it was consi-

dered equal to that of the Chinese, and thus a regular trade of manufactured silk was established not only at Constantinople, but at Athens, and other places in the Greek empire, from whence, by means of Venetian vessels, the rest of Europe was supplied.

About the year 1130, Roger II., King of Sicily, returning from Palestine, plundered the cities of Athens and Corinth, and compelled many of the workmen engaged in the manufacture of silk, to introduce the art into his own dominions, which, in process of time, was communicated to Italy and Spain, and ultimately to France, about the commencement of the sixteenth century.

Silk was most probably introduced into England by the monks from Rome, who made use of it for covering the altars of the churches; but there is no sufficient authority to support the supposition of its having been manufactured in England during the Saxon æra, or indeed earlier than the middle of the fifteenth century, at which time it is related there was a company of silk women in England, though probably these were merely employed in needle-work or embroidery, for most of the broad manufacture was at that period imported from Italy. In 1608 James I. sent circular letters into all the counties of England, recommending this branch of commerce to his subjects, and that mulberry trees should be generally planted in such soils as were favourable to their growth; he also published instructions relative to the feeding and breeding of silk-worms, having observed, as he states, that "In a few years' space, our brother, the French King, hath, since his coming to the crown, both begun and brought to perfection, the making of silk in his country, whereby he hath won to himself honour, and to his subjects a marvellous increase of wealth." Though the climate was found unfavourable to the propagation of the insect, yet the manufacture of cloth from the raw silk was greatly improved by the encouragement afforded by James, who procured some

artisans from abroad : and still more by the French Protestants, many of whom were weavers, who sought an asylum in this country in consequence of the revocation of the Edict of Nantes in 1685.

A method of procuring and preparing silk from spiders was discovered by Bonn, a Frenchman, in 1710, who manufactured with this material a pair of stockings and gloves : he estimated twelve house-spiders to be equal to one silkworm.

SKAITING. Fitz-Stephen informs us that it was customary for the English to amuse themselves on the ice in the thirteenth century, by fastening the bones of animals to the soles of their shoes, and by means of a stick with an iron spike pushing themselves forward with great velocity. The wooden skaites shod with iron and steel, were introduced from the Low Countries about the middle of the seventeenth century.

SLAVERY. From the earliest periods of history there seems to have existed a class of people devoted to slavery ; thus we find that Hagar, the bondwoman of Sarah, was an Egyptian, and was most probably purchased in Egypt, or given to Abraham by Pharoah, on his departure from that country ; and Joseph, when he was sold to the Ishmaelites, was immediately carried to Egypt, where he was bought by Potiphar, the captain of the King's guard : which proves that this nefarious traffic of the human species was prevalent in that remote era, and that Egypt was the principal market for that purpose. Even the Israelites, who for near two centuries had groaned under the severity of Egyptian bondage, encouraged a system of slavery among themselves. In the time of Homer, who flourished about 900 B. C., Cyprus and Egypt are celebrated as the principal depots for slaves, and this species of commerce was not only common through-

out Asia, but was practised both by the ancient Greeks, and Romans, and even among the barbarous nations, who finally overturned the Roman empire.

From the most remote period, the prisoners taken in war were considered the absolute property of the captors, and esteemed themselves fortunate in saving their lives by the sacrifice of their liberty; this custom seems to have been universal: hence some trace the commencement of slavery to the time of Nimrod, King of Babel, who first began to make war—

“ Proud Nimrod first the bloody chase began,
Almighty hunter, and his prey was man.”

Under the government of the Anglo-Saxons, slaves were publicly sold in the market place, and these were not only the prisoners taken in war, but parents used even to sell their children, and the young of both sexes were taken to the ships in droves, tied by ropes so that in fact there was a regular commerce of slaves established in this country.

The first check put to this inhuman and barbarous custom was the gradual introduction of Christianity, whose mild doctrines could not fail of producing a proper influence upon those who considered them as divine; — that this was evidently the cause, not only appears from the grants of manumission common in the middle ages, which are represented as proceeding “*pro amore Dei, pro mercede animæ,*” but from the circumstance of the system of slavery being still in full force in all countries where the Christian religion is not established; but although the condition of slaves was considerably ameliorated in all parts of civilized Europe, yet the system itself was not abolished; for we find in 1514 an Act of Manumission granted by Henry VIII. to two persons, commencing in these words: — “Whereas originally God created all men free, but afterwards the laws and customs of nations subjected some under the yoke of servitude: we think it pious and meritorious with God to make certain

persons absolutely free from servitude, who are at present under villenage to us, together with all their issue born, or hereafter to be born, and all their goods, chattels, and lands already acquired, or to be acquired, &c." Again, so late as the fifth year of Edward VI., it was ordered that "a runagate servant, or any other who liveth idly, being brought before a Justice of the Peace, shall be marked with a hot iron on the breast, with the letter V, and be the slave of him who brought him for two years, and if during that time he should absent himself without leave for fourteen days, he shall be marked on the forehead or ball of the cheek with the letter S, and shall be the slave of his said master for ever, and it shall be lawful for every person to whom any such shall be adjudged a slave, to put a ring of iron round his neck, arms, or legs. A charter of manumission, similar to that of Henry VIII., was granted by Elizabeth in 1572.

Hence we find that hereditary villenage, which probably existed in this country prior to the introduction of the feudal system by the Normans, was still common in Europe, though the custom of trafficking in slaves appears to have ceased in the thirteenth century.

However, within two centuries after the suppression of this species of commerce, which had been exploded on account of its impiety, the Portuguese, in imitation of those piracies which existed in the uncivilized ages of the world, made their descents in Africa, under their leader, Alonzo Gonzales, carrying off many of the inhabitants as slaves, and afterwards, for the better prosecution of their design, made a settlement in that country, and erected their first fort at D'Elmina in 1481.

About the year 1508 the Spaniards, who, by their barbarities, had destroyed almost all the natural subjects of their newly-discovered dominions in America, were at a loss for people to work their mines, and readily granted to the Portuguese an exclusive right of supplying their colonies with

slaves from Africa. This power, under the name of the *Asiento Contract*, was afterwards given to the French, and from them transferred to the English in 1689, and acted upon till the year 1750; but it appears that the English had procured slaves on their own account from Guinea in 1640, in order to cultivate their sugar-cane, which had lately been introduced into the West India islands, then thinly inhabited.

Mr. Granville Sharp was the first public advocate for the oppressed Africans: he spent whole years in collecting documents for proving the cruelty and wickedness of the traffic to the Government; and undertook, at his own expense, the celebrated case of *Somerset*, tried in the Court of King's Bench in 1772, in which it was declared to be the law of the land that "AS SOON AS ANY SLAVE SET HIS FOOT ON ENGLISH TERRITORY, HE BECAME FREE."

"Slaves cannot breathe in England; if their lungs

Receive our air, that moment they are free;

They touch our country, and their shackles fall."

In 1783, the Quakers petitioned Parliament against the continuance of the slave trade, but the first notice for taking the trade into consideration was made by Pitt, in 1788, and by the persevering exertions of Wilberforce, during a period of twenty years, the trade was declared illegal on the 25th March, 1807.

SNUFF. The custom of taking snuff was probably introduced into Europe about the same period as that of smoking, and appears to be first publicly noticed in a decree of excommunication, published by Urban VIII., in 1624, against all who should take snuff in church, which it seems the Spanish ecclesiastics were in the habit of doing during the celebration of mass: this edict was renewed by Innocent XII. in 1690, but revoked by Benedict XIV. in 1724, as his Holiness himself had rather a partiality for this stimulating commodity. In England, it was formerly the

practice to take snuff in a small spoon, and not by the pinch. Two ancient snuff boxes are represented in the *Archæologia*, which resemble the modern smelling boxes, having a spoon, like the cayenne spoon, fastened to the stopper.

SOAP. Cloaths were formerly washed by rubbing or stamping upon them in water, or beating them against rough boards. The Greeks, in the time of Aristophanes, used a kind of lye for cleansing the images of their gods, and nitrum was common in the baths of the Ptolemies. The Romans made use of various saponaceous plants, particularly the struthium, and had also a kind of soft soap or ointment, made from alkali and oil; but the hard soap, according to Pliny, was invented by the Gauls, and was made of goat's tallow and the ashes of the beech-tree. The Saxons were accustomed to smear their cloaths with some kind of soap, but Holinshed, the historian, says, that in his time, 1550, it was customary to scour and wet the cloaths with pig-dung, henlocks and nettles; "but such was the savour of cloaths touched withal, that I cannot abide to wear them on my body." About this period, soap was manufactured in London, yet during the reigns of Charles I. and II., and as recently as that of Queen Anne, many opulent families used to send their household and family linen all the way to Holland, to be washed and bleached.

SPECTACLES. The first hint for the construction and use of spectacles, is supposed to have been derived either from the writings of Alhazon, who lived in the twelfth century, or of our own countryman, Roger Bacon, who flourished in the middle of the thirteenth century, and to whom the invention of reading glasses is generally attributed. Francisco Redi says spectacles were invented between the years 1290 and 1311, by Alexander de Spina, a monk of the order of Predi-

cents of St. Catherine, at Pisa ; who communicated the mode of grinding the glasses to the public, in consequence of his being informed that another person had hit upon a similar invention. Under the word *Occhiale*, in the Dictionary of the Academy della Crusca, there is a quotation from Jourdan's Sermons, written in 1333, which says, that the use of spectacles had been at that time known for about twenty years.

SPINNING. The most ancient method of twisting the vegetable fibres of flax or cotton into thread, was by the spindle and distaff, mentioned by Homer ; the instrument called the one-thread wheel, now in common use, was invented in Germany, in 1530 ; and the addition of the treadle appears in the commencement of the eighteenth century. But the first improvement of any importance in spinning, was that of the spinning-jeony, invented by Hergraves, in 1767 ; which has been superseded by a complicated machine of still greater powers, invented by Sir Richard Arkwright, in 1769.

SPUR. Although it is not known when spurs were first introduced, they appear to have been common among the Anglo-Saxons, being made of brass or iron, and fastened to the foot by a leather thong, much in the same manner as at present ; but instead of a rowel, the hinder part of the spur was lengthened to a single point, like the gaffe of the fighting cock. The rundle, or rowel, is noticed in the time of Henry III. Anciently, the great mark of distinction between the knight and the squire was, that the former wore gold, and the latter silver spurs.

STAMPS—were introduced in order to increase the difficulty of forgery, by Justinian, in 537. They were first resorted to as a mode of taxation, by the Dutch, in 1624, and in this country in 1694.

STARCH. Piny informs us that starch was prepared from wheat, by the inhabitants of Chio. The method of starching linen was publicly taught in England in the year 1560, by a Dutch woman, the wife of Queen Elizabeth's coachman, for which she charged four or five pounds, and an additional pound for sheying the method of making starch.

STATUARY. This branch of sculpture is first noticed in the book of Genesis, in which the Teraphim, or household gods, are represented as having been clandestinely carried away by Rachel, the wife of Jacob, when she left her father's house. The golden calf erected by the Israelites in the Wilderness was first cast or molten, and afterwards "fashioned with a graven tool;" and the Cherubims, which extended their wings over the Ark of the Testimony, are described as beautiful specimens of sculpture, and prove that the art was brought to considerable perfection by the Hebrews, fifteen hundred years before the Christian *Æra*.

The Egyptians, in the time of Sesostris, had colossal statues, pyramids, and magnificent palaces, vestiges of which are still discoverable for an extent of five hundred miles along the course of the Nile. The palace of Memnon, situated near the ancient city of Thebes, contains two of the largest statues now remaining in Egypt; they are both in a sitting position, and about fifty-eight feet in height; one of them, according to the description of Diodorus and Strabo, was the famous statue of Osymandue or Memnon.

The Greeks are stated to have been instructed in the art of carving images, by Dædalus, about 1200 B. C., but nothing worthy of notice occurs till Phidias, about 500 B. C., constructed those celebrated statues of Jupiter at Elis, and of Minerva in the Parthenon at Athens. He was followed by Praxiteles, who in his Cupids and statues of Venus, particularly the one purchased by the citizens of Gnidos, is allowed

to have excelled all other sculptors in the graces of youth and beauty. A statue of Venus, supposed to have been executed by Cleomenes, the son of Apollodorus, about 300 B. C., was discovered in the fifteenth century among the ruins of ancient Rome, and placed in the palace of the Medicis, from which circumstance it is called the Venus de Medicis; and another of Apollo, recovered about the same time from the ruins of Antium, and placed in the Belvidere of the Vatican, by Pope Julius II., hence called the Apollo Belvidere, are considered as the most excellent and sublime of all the ancient specimens of sculpture, and to be superior to any of modern workmanship.

From the time of Phidias till about 140 B. C., Greece delighted the world by her inimitable productions, but when the Achæan league was dissolved, and she became a Roman province, most of the Greek artists were reduced to slavery, and the science rapidly declined; nevertheless some admirable busts and statues of the imperial families from Julius to Domitian, occasionally evinced the extraordinary skill and genius of that people.

The Romans found it easier to enrich their city with the spoils of other countries, than to imitate the workmanship of foreign artists, though, after the ravages of Corinth and Athens, they exhibited an inordinate degree of cupidity and ostentation for works of superior art, which passed in some instances for patronage, and filled their palaces and public edifices with the statues and paintings of Greece.

The formation of the Academy of Sciences at Florence, in 1350, and the subsequent discovery of several valuable remains of Grecian sculpture, occasioned the revival of the liberal arts in Europe, and in the course of a short time, under the protection of the Medici family, many illustrious artists were produced; at length Michael Angelo Buonarrotti, under the patronage of Lorenzo de Medicis and Pope Julius II., advanced the sciences of sculpture, architecture and

painting to a height which has not since been surpassed ; this great man, who died at Rome, in 1564, at the advanced age of ninety years, had acquired the affection and esteem of all the sovereigns of Europe, and even of Solymán, emperor of the Turks, being no less celebrated for the sublimity and originality of his genius, than for his unimpeached integrity, generosity and piety.

STEAM. Stuart informs us that Hero, the elder, in his *Pneumatica*, written about 130 B.C., has described two machines, in one of which a rotatory motion was produced by the emission of heated air, and a similar motion imparted to the other by the action of vapour arising from boiling water.

The first writer in modern times who alludes to the power of steam, is Bancas, an Italian, who in his work entitled "The Machine," written in 1629, states that he had put into motion the floats or vanes of a small mill, by allowing the steam issuing from a large aeolopile to act upon them. The Marquis of Worcester, in his "Hundred Inventions," published in 1663, informs us that from the accidental circumstance of a cover of a vessel in which he was dressing his food while a prisoner in the Tower, being suddenly driven with great violence up the chimney, he had been induced to try a number of experiments relative to the expansive force of steam, and at length had invented an engine by which it could be made conducive to the public interests, in raising water from pits or wells, which engine was afterwards recommended to Lewis XIV. by Sir Samuel Morland, for the purpose of irrigating his grounds at St. Germain's.

In 1698, Captain Savary obtained a patent for a new method of clearing coal and other mines of water, and he may justly be considered as the first person who rendered steam applicable to manufacturing purposes ; but various important improvements have, since his time, been effected in the construction of steam engines, among which may be

numbered the piston and safety valve, by Papin, in 1710 ; the separate condenser by Watt, in 1765 ; the double-acting engine, by Filk, in 1780, and the high pressure engine, for the propelling of carriages on rail-ways, by Vivian, in 1802.

The power of steam was first applied to boats, by Hall, in 1736, for towing vessels into and out of port, but was not generally employed for the purposes of navigation till the year 1807, when Fulton, an American, in connexion with Mr. Bell, of Glasgow, and with engines of Bolton and Watt's construction, established several steam vessels in North America ; these boats answering extremely well, Bell, on his return to Scotland in 1811, built the *Comet*, steam boat, of twenty-five tons, with an engine of four horse power, to navigate the Clyde between Glasgow and the Helensbury baths, which led to the general introduction of steam vessels in various other parts of the kingdom, but it was not till the year 1818 that they ventured to undertake regular voyages at sea.

STEEL. Although the invention of steel is of great antiquity, it seems to be doubtful whether it is alluded to in any part of the Old Testament. Among the Greeks, in the time of Homer, it was known under the names of *stomoma* and *ademas*, and also of *chalybs*, from the *Chalybes*, a people on the borders of the Euxine sea, who carried on a large trade in iron and steel, which latter name was also given to it by the Romans, because they procured their best steel from Spain, near the river *Chalybs*, whose waters had the peculiar property of hardening or tempering it.

The Greeks and Romans were only acquainted with the method of preparing steel by fusion, as practised by the *Chalybes*. The superior method of forming steel by cementation was however known to the Asiatics in the time of Alexander, as the Persian sword-blades, and those of Damascus, were at that period in high repute ; and these are

composed of slips or thin rods of iron and steel, bound together with iron wire, and then firmly cemented by welding.

Diodorus, in his account of iron, says, "It was customary among the Celtiberians in Spain to bury the iron in the earth, that the baser part of it might be converted to rust, and then what remained was forged into swords, and other sharp-edged instruments."

The method of melting or casting steel, was brought into this country from Germany, in 1790; and that of joining steel to iron, by welding instead of rivetting, is said to have been discovered by Sir Thomas Frankland.

STENOGRAPHY. The Roman poet Ennius, is reported to have invented a method of short-hand writing, by which the notarii were enabled to transcribe the identical speeches of the most rapid orator.

STIRRUP. (*See Saddle.*)

STOCKINGS. Suetonius informs us that this part of dress was introduced under the Roman emperors, and that Augustus himself had coverings for his legs, called tibialia. The Anglo-Saxons also wore stockings, and sometimes only slips of linen of different colours, crossed up the leg, after the manner of the Highlanders. In a wardrobe roll, containing an account of apparel purchased for the use of King John, there is frequent mention made of *hosearum vacciniarum*, or stockings of calf-skin. However, the Normans of rank generally had stockings made of woollen cloth, or of costly stuffs interwoven and embrodered with gold and silver. Knit worsted stockings imported from Italy were worn by the gentry in the time of Henry VIII.; and in 1530, a pair of silk stockings was sent to that Monarch, from Spain. The wardrobe of Henry on his decease contained, "one pair of short hose of black silk and gold woven together, one pair of hose

of purple silk and Venice gold, woven like a caul and lined with blue silver sarsnet, edged with a passemain of purple silk and of gold wrought at Milan; one pair of hose of white silk and gold knit, bought of Christopher Millener, and six pair of black silk hose knit." In the time of Elizabeth it was common for young men of rank, to wear stockings of different fashions and different colours upon each leg; and in the year 1561, the first pair of silk stockings was knit in this country, and presented to the Queen by Mrs. Montague, her silk-woman; about the same period the method of knitting worsted stockings was introduced by William Ryder. (*See Knitting.*) The unfortunate Mary, Queen of Scots, at her execution wore stockings of blue worsted, clocked, and edged at the top with silver, and under them another pair of white stockings.

In the year 1589 a machine for weaving stockings was invented by William Lee, Master of Arts, of St. John's College, Cambridge. This gentleman, it appears, having been expelled the University for marrying at an age not allowed by the statutes of the College, was reduced to the necessity of living upon what his wife could earn by knitting of stockings; and by curiously observing the working of the needles, formed in his mind a method of facilitating the operation: having completed the model of a machine for that purpose, he applied to Elizabeth for protection and encouragement, but meeting with no success, he went to France, and established himself at Rouen, in Normandy, under a promise of being patronized and recompensed by Henry IV. The assassination of this monarch in 1610 occasioned another disappointment in his expectations, and he soon afterwards died of a broken heart at Paris. After his decease, seven of his workmen, with their frames, returned to England, and in conjunction with one Ashton, who had been apprentice to Lee, laid the foundation of this manufacture in England, which soon superseded the stock-

ings made of woollen cloth or leather, still worn by the common people in this country.

STOVES. The ancients generally warmed their rooms by portable braziers, the wood being prepared in such a manner as to occasion little inconvenience from smoke; but in the time of Seneca, the Romans had a method of heating their rooms by flues. In 1680, Delasme, invented a stove which might be placed in the middle of the room, the smoke being made to descend and pass through flues under the floor, till it found a vent in the walls.

SUGAR. It is supposed that the Hebrew word, "*kene*," which occurs frequently in the Old Testament, and is in our translation rendered sometimes "*calamus*," and sometimes "*sweet cane*," was in fact the sugar-cane, and that the Hebrews extracted from it a kind of fermented beverage, which they called "*sacher*," from which the Greek, "*sukker*," or "*sugar*," is derived.

The sugar-cane is first distinctly noticed as growing in India by Nearchus, who conducted the fleet of Alexander down the Indus; but no mention is made of the manner of expressing the juice from it.

Dr. Douglas asserts, that the ancient Greeks and Romans used only honey for sweetening, and that sugar was unknown to them. Galen, however, describes it as a kind of honey concreted in reeds, and which came from Arabia Felix and India.

Albertus Aquensis informs us that the Crusaders found in Syria sweet honied reeds, which afforded great relief to them during the sieges of Albaria and Archos; he also notices the method of expressing and purifying the juice, as practised by the inhabitants of Acre and Tripoli; the cane appears to have been early cultivated in Sicily, for Latifan recites a donation of William II., King of Sicily, to the monastery of St.

cants of St. Catherine, at Pisa ; who communicated the mode of grinding the glasses to the public, in consequence of his being informed that another person had hit upon a similar invention. Under the word *Occhiale*, in the Dictionary of the Academy della Crusca, there is a quotation from Jourdan's Sermons, written in 1333, which says, that the use of spectacles had been at that time known for about twenty years.

SPINNING. The most ancient method of twisting the vegetable fibres of flax or cotton into thread, was by the spindle and distaff, mentioned by Homer ; the instrument called the one-thread wheel, now in common use, was invented in Germany, in 1530 ; and the addition of the treadle appears in the commencement of the eighteenth century. But the first improvement of any importance in spinning, was that of the spinning-jeony, invented by Hergraves, in 1767 ; which has been superseded by a complicated machine of still greater powers, invented by Sir Richard Arkwright, in 1769.

SPUR. Although it is not known when spurs were first introduced, they appear to have been common among the Anglo-Saxons, being made of brass or iron, and fastened to the foot by a leather thong, much in the same manner as at present ; but instead of a rowel, the hinder part of the spur was lengthened to a single point, like the gaffe of the fighting cock. The randle, or rowel, is noticed in the time of Henry III. Anciently, the great mark of distinction between the knight and the squire was, that the former wore gold, and the latter silver spurs.

STAMPS—were introduced in order to increase the difficulty of forgery, by Justinian, in 537. They were first resorted to as a mode of taxation, by the Dutch, in 1624, and in this country in 1694.

STARCH. Pliny informs us that starch was prepared from wheat, by the inhabitants of Chio. The method of starching linen was publicly taught in England in the year 1560, by a Dutch woman, the wife of Queen Elizabeth's coachman, for which she charged four or five pounds, and an additional pound for sheving the method of making starch.

STATUARY. This branch of sculpture is first noticed in the book of Genesis, in which the Teraphim, or household gods, are represented as having been clandestinely carried away by Rachel, the wife of Jacob, when she left her father's house. The golden calf erected by the Israelites in the Wilderness was first cast or molten, and afterwards "fashioned with a graven tool;" and the Cherubims, which extended their wings over the Ark of the Testimony, are described as beautiful specimens of sculpture, and prove that the art was brought to considerable perfection by the Hebrews, fifteen hundred years before the Christian *Æra*.

The Egyptians, in the time of Sesostris, had colossal statues, pyramids, and magnificent palaces, vestiges of which are still discoverable for an extent of five hundred miles along the course of the Nile. The palace of Memnon, situated near the ancient city of Thebes, contains two of the largest statues now remaining in Egypt; they are both in a sitting position, and about fifty-eight feet in height; one of them, according to the description of Diodorus and Strabo, was the famous statue of Osymandue or Memnon.

The Greeks are stated to have been instructed in the art of carving images, by Dædalus, about 1200 B. C., but nothing worthy of notice occurs till Phidias, about 500 B. C., constructed those celebrated statues of Jupiter at Elis, and of Minerva in the Parthenon at Athens. He was followed by Praxiteles, who in his Cupids and statues of Venus, particularly the one purchased by the citizens of Gnidos, is allowed

to have excelled all other sculptors in the graces of youth and beauty. A statue of Venus, supposed to have been executed by Cleomenes, the son of Apollodorus, about 300 B. C., was discovered in the fifteenth century among the ruins of ancient Rome, and placed in the palace of the Medicis, from which circumstance it is called the Venus de Medicis; and another of Apollo, recovered about the same time from the ruins of Antium, and placed in the Belvidere of the Vatican, by Pope Julius II., hence called the Apollo Belvidere, are considered as the most excellent and sublime of all the ancient specimens of sculpture, and to be superior to any of modern workmanship.

From the time of Phidias till about 140 B. C., Greece delighted the world by her inimitable productions, but when the Achæan league was dissolved, and she became a Roman province, most of the Greek artists were reduced to slavery, and the science rapidly declined; nevertheless some admirable busts and statues of the imperial families from Julius to Domitian, occasionally evinced the extraordinary skill and genius of that people.

The Romans found it easier to enrich their city with the spoils of other countries, than to imitate the workmanship of foreign artists, though, after the ravages of Corinth and Athens, they exhibited an inordinate degree of cupidity and ostentation for works of superior art, which passed in some instances for patronage, and filled their palaces and public edifices with the statues and paintings of Greece.

The formation of the Academy of Sciences at Florence, in 1350, and the subsequent discovery of several valuable remains of Grecian sculpture, occasioned the revival of the liberal arts in Europe, and in the course of a short time, under the protection of the Medici family, many illustrious artists were produced; at length Michael Angelo Buonarrotti, under the patronage of Lorenzo de Medicis and Pope Julius II., advanced the sciences of sculpture, architecture and

painting to a height which has not since been surpassed ; this great man, who died at Rome, in 1564, at the advanced age of ninety years, had acquired the affection and esteem of all the sovereigns of Europe, and even of Solyman, emperor of the Turks, being no less celebrated for the sublimity and originality of his genius, than for his unimpeached integrity, generosity and piety.

STEAM. Stuart informs us that Hero, the elder, in his *Pneumatica*, written about 130 B.C., has described two machines, in one of which a rotatory motion was produced by the emission of heated air, and a similar motion imparted to the other by the action of vapour arising from boiling water.

The first writer in modern times who alludes to the power of steam, is Bancas, an Italian, who in his work entitled "The Machine," written in 1629, states that he had put into motion the floats or vanes of a small mill, by allowing the steam issuing from a large caldron to act upon them. The Marquis of Worcester, in his "Hundred Inventions," published in 1663, informs us that from the accidental circumstance of a cover of a vessel in which he was dressing his food while a prisoner in the Tower, being suddenly driven with great violence up the chimney, he had been induced to try a number of experiments relative to the expansive force of steam, and at length had invented an engine by which it could be made conducive to the public interests, in raising water from pits or wells, which engine was afterwards recommended to Lewis XIV. by Sir Samuel Morland, for the purpose of irrigating his grounds at St. Germain's.

In 1698, Captain Savary obtained a patent for a new method of clearing coal and other mines of water, and he may justly be considered as the first person who rendered steam applicable to manufacturing purposes ; but various important improvements have, since his time, been effected in the construction of steam engines, among which may be

numbered the piston and safety valve, by Papin, in 1710 ; the separate condenser by Watt, in 1765 ; the double-acting engine, by Filk, in 1780, and the high pressure engine, for the propelling of carriages on rail-ways, by Vivian, in 1802.

The power of steam was first applied to boats, by Hall, in 1736, for towing vessels into and out of port, but was not generally employed for the purposes of navigation till the year 1807, when Fulton, an American, in connexion with Mr. Bell, of Glasgow, and with engines of Bolton and Watt's construction, established several steam vessels in North America ; these boats answering extremely well, Bell, on his return to Scotland in 1811, built the Comet, steam boat, of twenty-five tons, with an engine of four horse power, to navigate the Clyde between Glasgow and the Helensbury baths, which led to the general introduction of steam vessels in various other parts of the kingdom, but it was not till the year 1818 that they ventured to undertake regular voyages at sea.

STEEL. Although the invention of steel is of great antiquity, it seems to be doubtful whether it is alluded to in any part of the Old Testament. Among the Greeks, in the time of Homer, it was known under the names of stomoma and ademas, and also of chalybs, from the Chalybes, a people on the borders of the Euxine sea, who carried on a large trade in iron and steel, which latter name was also given to it by the Romans, because they procured their best steel from Spain, near the river Chalybs, whose waters had the peculiar property of hardening or tempering it.

The Greeks and Romans were only acquainted with the method of preparing steel by fusion, as practised by the Chalybes. The superior method of forming steel by cementation was however known to the Asiatics in the time of Alexander, as the Persian sword-blades, and those of Damascus, were at that period in high repute ; and these are

composed of slips or thin rods of iron and steel, bound together with iron wire, and then firmly cemented by welding.

Diodorus, in his account of iron, says, "It was customary among the Celtiberians in Spain to bury the iron in the earth, that the baser part of it might be converted to rust, and then what remained was forged into swords, and other sharp-edged instruments."

The method of melting or casting steel, was brought into this country from Germany, in 1790; and that of joining steel to iron, by welding instead of rivetting, is said to have been discovered by Sir Thomas Frankland.

STENOGRAPHY. The Roman poet Ennius, is reported to have invented a method of short-hand writing, by which the notarii were enabled to transcribe the identical speeches of the most rapid orator.

STIRRUP. (*See Saddle.*)

STOCKINGS. Suetonius informs us that this part of dress was introduced under the Roman emperors, and that Augustus himself had coverings for his legs, called tibialia. The Anglo-Saxons also wore stockings, and sometimes only slips of linen of different colours, crossed up the leg, after the manner of the Highlanders. In a wardrobe roll, containing an account of apparel purchased for the use of King John, there is frequent mention made of *hosearum vacciniarum*, or stockings of calf-skin. However, the Normans of rank generally had stockings made of woollen cloth, or of costly stuffs interwoven and embroidered with gold and silver. Knit worsted stockings imported from Italy were worn by the gentry in the time of Henry VIII.; and in 1530, a pair of silk stockings was sent to that Monarch, from Spain. The wardrobe of Henry on his decease contained, "one pair of short hose of black silk and gold woven together, one pair of hose

of purple silk and Venice gold, woven like a caul and lined with blue silver sarsnet, edged with a passemain of purple silk and of gold wrought at Milan; one pair of hose of white silk and gold knit, bought of Christopher Millener, and six pair of black silk hose knit." In the time of Elizabeth it was common for young men of rank, to wear stockings of different fashions and different colours upon each leg; and in the year 1561, the first pair of silk stockings was knit in this country, and presented to the Queen by Mrs. Montague, her silk-woman; about the same period the method of knitting worsted stockings was introduced by William Ryder. (*See Knitting.*) The unfortunate Mary, Queen of Scots, at her execution wore stockings of blue worsted, clocked, and edged at the top with silver, and under them another pair of white stockings.

In the year 1589 a machine for weaving stockings was invented by William Lee, Master of Arts, of St. John's College, Cambridge. This gentleman, it appears, having been expelled the University for marrying at an age not allowed by the statutes of the College, was reduced to the necessity of living upon what his wife could earn by knitting of stockings; and by curiously observing the working of the needles, formed in his mind a method of facilitating the operation: having completed the model of a machine for that purpose, he applied to Elizabeth for protection and encouragement, but meeting with no success, he went to France, and established himself at Rouen, in Normandy, under a promise of being patronized and recompensed by Henry IV. The assassination of this monarch in 1610 occasioned another disappointment in his expectations, and he soon afterwards died of a broken heart at Paris. After his decease, seven of his workmen, with their frames, returned to England, and in conjunction with one Ashton, who had been apprentice to Lee, laid the foundation of this manufacture in England, which soon superseded the stock-

ings made of woollen cloth or leather, still worn by the common people in this country.

STOVES. The ancients generally warmed their rooms by portable braziers, the wood being prepared in such a manner as to occasion little inconvenience from smoke; but in the time of Seneca, the Romans had a method of heating their rooms by flues. In 1680, Delasme, invented a stove which might be placed in the middle of the room, the smoke being made to descend and pass through flues under the floor, till it found a vent in the walls.

SUGAR. It is supposed that the Hebrew word, "*kene*," which occurs frequently in the Old Testament, and is in our translation rendered sometimes "*calamus*," and sometimes "*sweet cane*," was in fact the sugar-cane, and that the Hebrews extracted from it a kind of fermented beverage, which they called "*sacher*," from which the Greek, "*sukker*," or "*sugar*," is derived.

The sugar-cane is first distinctly noticed as growing in India by Nearchus, who conducted the fleet of Alexander down the Indus; but no mention is made of the manner of expressing the juice from it.

Dr. Douglas asserts, that the ancient Greeks and Romans used only honey for sweetening, and that sugar was unknown to them. Galen, however, describes it as a kind of honey concreted in reeds, and which came from Arabia Felix and India.

Albertus Aquensis informs us that the Crusaders found in Syria sweet honied reeds, which afforded great relief to them during the sieges of Albaria and Archos; he also notices the method of expressing and purifying the juice, as practised by the inhabitants of Acre and Tripoli; the cane appears to have been early cultivated in Sicily, for Latifan recites a donation of William II., King of Sicily, to the monastery of St.

Bennet, dated in 1166, of a mill for grinding sugars, with all its rights members and appurtenances. From Sicily the cane was transplanted by the Portuguese to Madeira, in 1490, and soon afterwards to the Canaries, from which place it was sent to Brasil, about the commencement of the sixteenth century, and to St. Domingo, by Columbus, in 1493. In the year 1641, sugar canes were transplanted from Brasil to Barbadoes, and thence to our other West India Islands.

Dr. Haylyn, in his *Cosmography*, states that the boiling and baking of sugars was first practised in Europe about the year 1420, before which time the juice was used rough as it came from the cane, and that the art of refining sugar and forming it into loaves, was communicated by a Venetian about the year 1550; but whether this was a discovery of his own, or had been acquired from China, where it had been practised for several ages, cannot be ascertained.

SUNDAY. The ancient Christians observed the Jewish sabbath as well as the Sunday or "Lord's Day," both to satisfy the law of Moses, and to imitate the Apostles. Constantine the Great was the first who made it a law, that Sunday should be peculiarly devoted to religious observances throughout the Roman empire; but he allowed the country people to follow their usual occupations; and though the Council of Orleans, held in 538, prohibited this country labour, yet it declares that to hold it unlawful to travel with horses, cattle, and carriages, to prepare food, or to do any thing necessary for comfort or cleanliness, upon this day favours more of Judaism than Christianity.

SURGERY. Pliny tells us, on the authority of Cassius Hermeria, that Archagathus, a Greek, first practised the art of Surgery, at Rome, about 180 B. C., and so frequently employed the knife, hot irons, and other cruel methods of cure, that he was branded with the name of butcher, and expelled the city; and from that period, to the time of Galen,

A.D. 160, no person ventured to perform any surgical operation. From this time nothing worthy of notice occurs till the year 1163, when the council of Tours prohibited the ecclesiastics, who then shared with the Jews the practice of medicine in Christian Europe, undertaking any bloody operation, and thus a separation was first established, between medicine and surgery, the latter being abandoned to the laity, who, in these ages of barbarism, were almost all entirely unlettered and destitute of education.

In this state surgery remained till about the commencement of the sixteenth century, when the writings of Vesalius gave a turn for anatomical investigations, and under the skilful management of Ambrose Peré, a Frenchman, the art began to be first treated with respect and consideration. This person was the surgeon of Henry II., Francis II., Charles IX., and Henry III. of France; and his mere presence, in a besieged town, was sufficient to re-animate those who were employed in its defence. Instead of searing the arteries, or steeping the mutilated limb into hot pitch, as had been the custom, he introduced the ligature and needle, and was the restorer, if not the inventor, of the art of tying the blood vessels: indeed, so great was his reputation, that though a Protestant, he was excepted by Charles IX. from the general massacre of the night of St. Bartholomew, being concealed in the King's chamber, who, as Brontome expresses it, was not willing that the man who was capable of saving half the world, should himself be put to death. Henry V. of England, besides his physician, had his surgeon, who attended him in his wars, and received the same allowances as the physician: but surgery itself does not appear to have been held in much estimation in this country, till the commencement of the last century.

TAPESTRY. The ancient Persians and Babylonians were accustomed to decorate their temples with tapestry, upon which, the adventures of their most celebrated gods or heroes were worked or embroidered ; and from them the art was most probably acquired by the Greeks. According to Pliny, it was first noticed by the Romans, at the court of Attalus, king of Pergamus, about the year 130 B.C., whose hall or principal apartment, is described as having been lined with silk or cloth, having figures worked upon it, in gold and silver. The fashion was soon afterwards introduced into Rome, under the name of Aulea, and we find that in the Anglo-Saxon times, the embroidered work of the English ladies was highly celebrated in foreign countries ; and like that of the Persians, was generally consecrated to religious purposes. Notice has already been taken of the golden vail, which Wiglof, king of Mercia, gave to the Abbey of Croyland ; and on which, was embroidered the destruction of Troy, and a specimen of ancient English tapestry, sixty-seven yards long by nineteen inches in breadth, is still preserved in the cathedrel of Bayeaux, describing the history of the conquest of this country, by William of Normandy, from Harold's embassy, in 1065, to his death at the battle of Hastings, and supposed to have been executed by Matilda, the wife of William the Conqueror, and the ladies of her court.

The particular species of woven or embroidered stuffs, now known under the name of tapestry, according to Guicciarden,

was invented at Brussels in the commencement of the fifteenth century, and attempted to be introduced into England by William Sheldon, about the end of the reign of Henry VIII. The manufacture was afterwards revived by Sir Francis Crane, under the patronage of James I. in 1619, and had arrived at considerable reputation, when the civil war commenced.

The French established a manufacture for tapestry, at Paris, in the time of Henry IV., which was brought to great perfection by the Gobelins under Louis XIV. The Arras received its name from the principal manufactory at Artois.

The principal apartments in the palaces and houses of the wealthy were lined with tapestry, or with painted canvas, till the commencement of the eighteenth century, when paper-hangings of various descriptions were introduced.

TEA. About the year 1591, the Dutch East India Company brought into Europe the dried leaves of the tea shrub, with the method of producing an agreeable beverage, by infusing them in boiling water: this seems to have been so much approved of, that it was drank in the coffee-houses of England before the year 1660, as appears, from a duty of eight-pence a gallon being then imposed upon the liquor sold in those places. The first importation of tea by the English East India Company, was in 1669, when two canisters, weighing 143lbs, were forwarded to England by the resident merchants at Canton. About the year 1720, tea was generally drank by the middle classes of society.

TELEGRAPH. It is stated that the fall of Troy was communicated to Argos by preconcerted signals; and Polybius assures us it was effected by a chain of columns, upon which torches were placed in particular positions, corresponding to certain letters in the alphabet.

In modern times, the utility of telegraphic signals was first

suggested by the Marquis of Worcester, in his *Century of Inventions*, published in 1663, but was not practically carried into effect till the year 1793, when the French Government, at the recommendation of Citizen Chappe, erected telegraphs in various parts of France. The Admiralty Telegraph, the first of the kind in England, was erected in 1796.

TELESCOPE. It seems to be doubtful whether this noble invention originated from some casual circumstance, or was the offspring of ratiocination; neither can it be determined exactly to whom the honor of the invention is due. Molyneux, in his "*Dioptrica Nova*," asserts, that from various phrases in the "*Opus Majus*" of Friar Bacon, it is evident he not only understood the nature of all optical glasses, but how to combine them so as to form some such instrument as the telescope; and this observation is confirmed by Thomas Digges, in his "*Stratisticon*," published in 1579, wherein he assures us, that his father, Leonard Digges, actually constructed telescopes from a manuscript description of one by Bacon.

The general opinion however seems to be, that Jenson or Hanson, a spectacle maker at Middleburgh, was the real inventor of the telescope, about the year 1590, and that he presented one of his making to Prince Maurice, under the idea that it might be serviceable to him in his military operations; soon after which the celebrated Galileo, having heard that an optical instrument had been constructed, by which distant objects were made to appear as if near, commenced upon the formation of a similar instrument, and without either any model or instructions, produced a refracting telescope, which he presented to the Doge and Senate of Venice, with an account of the uses to which the instrument might be applied.

These refracting telescopes were found to magnify in proportion to their length, and therefore, if required, for astrono-

mical observations, they were necessarily constructed of a size very inconvenient to manage; hence they obtained the name of *aerial telescopes*, from their being always exposed to the weather. At length, a method of making short telescopes, of much greater powers than any of the refracting telescopes, by means of a reflecting speculum, was discovered by James Gregory, of Aberdeen, assisted by Sir Isaac Newton, in 1663; and by a series of gradual improvements, Hadley in 1723, presented to the Royal Society a reflecting telescope, in which the focus of the speculum being ten feet six inches, was equal in power to the Huygenian refractor of 123 feet.

Achromatic Lenses were invented by Chester Moore, Esq., in 1729, for his own private use; but being applied by Dollond in 1758 to his telescopes, it gave occasion to a trial at Westminster respecting the priority of invention and consequent right of patent, which was determined in favour of Dollond, Lord Mansfield observing that the person who locked up his invention in his secretaire was not the one who ought to profit by a patent, but he who produced it for the benefit of the public.

THERMOMETER: The earliest account we have of an instrument for measuring the heat of the atmosphere, is that noticed in the "*Spiritualia*," of Hero of Alexandria, written about 130 B. C., which is described as a large weather glass, in which water was made to rise or fall by the changes of heat and cold. About the close of the sixteenth century Sanctorio, an Italian, reduced the hydraulic machine of Hero into a more compendious form, which he called the aerial thermometer: it consisted of a glass tube, having at one end a large glass ball, and open at the other: this tube having been heated to rarify the internal air, had its open end placed in a trough of coloured liquor, which, by the pressure

of the atmosphere, was forced up the tube till it was resisted by the spring of the internal air, and which spring was more or less, according to the heat of the atmospheric air. This instrument was brought to England by Drebbel in the time of James I.; but the plan was afterwards altered, and considerably improved upon by the Academists del Cimento of Florence, who, by hermetically sealing the open end of the tube, the air being previously exhausted, caused the coloured fluid, it contained, which was spirits of wine, to expand or rise instead of fall by the accession of heat. The application of mercury, instead of spirits of wine, was first suggested by Dr. Halley; though the honour of reducing it to practice is due to Fahrenheit, a Dutchman, in 1730, who also first affixed a graduated scale to the tube, commencing from the greatest known degree of artificial cold, which he called zero, and extending to the boiling part of mercury, which he considered as equal to six hundred degrees, which degrees were indicative of the expansion or magnitude of the quicksilver, in so many minute portions, beyond the extreme of artificial cold, or its original bulk.

TIN. This metal was employed as an alloy to others by the Egyptians and Greeks, and is noticed by Moses. Great quantities of tin were exported from Cornwall by the Phœnicians, 600 B. C. Pliny ascribes to the Gauls the art of tinning or covering copper and other metals with a thin coat of tin, for culinary purposes.

TOBACCO. This plant was probably used for smoking in various parts of Asia, and especially in China, long before the discovery of it in the New World; it was first brought to Europe from America, and received its name from its having been first discovered in the Island of Tobago, or, as others state, from the Spaniards having been first acquainted

with its uses at Tobacco, a province in Yutican. An account of the plant under the name of Cohoba, was published in 1496, by Romanus Pere, a Spanish monk, whom Columbus, on his second departure from America, had left at St. Domingo; and it was shortly afterwards imported in considerable quantities both by Spain and Portugal. In 1559 Jean Nicot, the French Ambassador at the Portuguese Court, sent some seeds of tobacco to his own country, where it was cultivated under the name of Nicotania. It was introduced into this country by Sir Francis Drake, in 1560.

The custom of *smoking* was common to the natives of America, and therefore came into Europe with the plant itself. James I., by many heavy imposts, endeavoured to abolish the use of tobacco, which he considered as prejudicial to the health of his subjects; and in 1619 wrote a treatise expressly against the use of it, which he entitled "A Counterblast to Tobacco," wherein he complains "that some of the gentry of the land bestowed three and some four hundred a-year on this precious stink;" hence, probably, its great scarcity in England, for Aubrey, who wrote about the year 1680, says, "I have heard some of our old yeomen neighbours affirm, that when they went to market, they culled out their biggest shillings to lay in the scales against the tobacco;" thus making it in value equal to its weight in silver.

Aubrey further informs us that the *pipes* used by the opulent were made of silver, in the form of *woodcocks' heads*, which was the name given to them, and that the common people made use of walnut-shell and a straw: pipes made of clay, were used by the native Indians of Virginia in 1585, though our common pipes did not appear till the commencement of the eighteenth century.

The practice of *chewing tobacco* is cotemporary with that of smoking. The Romans are said to have been partial to the chewing of mallow, and the stalks of the asphodel.

TRANSPORTATION was first inflicted as a punishment in the time of Elizabeth, though but little resorted to till the reign of Charles II., when persons found guilty of offences capital to the benefit of clergy, and sentenced to be imprisoned, were transported to the British settlements, in North America, not as slaves, but servants, being bound by indenture to their masters for seven years; the last three of which, they were entitled to wages. When the American revolution restricted the transportation of convicts to that country, the system of confining prisoners to hard labour was adopted, but this form the number of the prisoners proving inconvenient, it was determined, in 1787, to establish a colony in New South Wales, and to send the convicts there to assist in the cultivation of the soil.

TRUMPET. This instrument is said to have been invented by the Egyptians, and from the earliest period was made use of on all solemn or grand occasions; it was probably introduced into this country by the Romans, and so early as 775 we read of its being sounded to command respect and silence, on the approach of majesty.

The invention of the *speaking trumpet* is attributed to Athanasius Kircher, about the middle of the seventeenth century, but his works were written in so confused a style; that they were for a considerable time neglected, and the credit of the invention is, therefore, more generally given to Sir Samuel Morland, who made trial of one of five feet six inches in length, in the presence of Charles II., in 1670; and, though speaking in his ordinary pitch of voice, was heard at the distance of one thousand yards. Another person, selected probably for the loudness and distinctness of his voice, was perfectly understood at the distance of four miles and a half. The speaking trumpet said to have been used by Alexander the Great, is considered as fabulous.

The *Ear-trumpet*, for the convenience of those who are deaf, is supposed to have been invented by Baptista Porta; and Kircher describes a method of constructing a funnel, by which people in separate apartments might converse with one another, as is now common in many mercantile houses.

ULTRAMARINE. A beautiful blue pigment, procured from the Lapis Lazuli, and supposed to have been introduced from Persia into Europe in the sixth century; the word itself, Ultramarine, first occurs in the sixteenth century.

UNIFORM. About the middle of the fifteenth century, Charles VII. of France having formed a regiment of cavalry, consisting of fifteen companies of six hundred men each, directed, that in order that the men might be known in action, or discovered, if guilty of irregularities, they should wear the livery of the Captain of the corps to which they belonged; for which purpose their coats were ornamented with appropriate colours, and hence proceeded that uniformity in clothing which has been established among the European troops. In this country, the soldiers being the tenants or retainers of particular Barons, wore the badges of their respective Commanders, in a dress somewhat similar to that of the firemen or watermen of London; till about the time of Charles II. when a national uniform was introduced. The naval uniform appeared in the commencement of the eighteenth century.

URN. Among the curiosities discovered at Pompeii, was an urn containing a hollow metallic cylinder for the insertion of a red hot iron, and in every respect similar to the common tea urn.

VACCINATION: (*See Inoculation.*)

VELLUM. (*See Parchment.*)

VIOLIN. It has been much disputed by the learned, whether any instrument resembling the violin was played upon by the ancients : the general opinion seems to be, that it was invented by the Italians in the tenth century, at which time it was called the rebec, and had but three strings : when the fourth string was added is unknown. The viol played with a bow is noticed in the legendary tale of St. Christopher, written in the year 1300: In the time of Chaucer the fiddle was called a crowd, and the performer upon it a crowder.

Beltazarini, a celebrated performer in the time of Lewis XIV., first brought this instrument into repute, and a regular band of violin players was established for the entertainment of that Monarch. In imitation of which Charles II. formed a similar company for his court.

VISCOUNT. This rank, considered only as a title of honour, was first conferred by Henry VI. on John Lord Beaumont, in 1440.

WAITS are supposed to have been formerly poor minstrels, part of whose duty it was during the winter nights to parade and guard the streets, and occasionally to call the hour.

WALKING-STICKS are first noticed as being used by young men of fashion in this country, about the middle of the seventeenth century, when they were formed with an indented head in order to afford a more easy pressure of the hand which they supported; this was afterwards altered for a round hollow top, which sometimes contained nutmeg, or ginger to warm the stomach of the valetudinarian; but soon after coming into general use, the cavity was exclusively appropriated to its reception, and the meeting of two friends was invariably marked, after the first salutation, by the unscrewing the tops of their walking-sticks, and offering to each other their titulating treasure.

WALNUTS,—originally called Gaul nuts, having been introduced into this country from France in the time of the Saxons.

WATCH. (See Clock).

WATCHMEN, with the exception of the waits, are not noticed in London prior to the sixteenth century; they are mentioned with their rattles in the middle of the seventeenth.

WATER. London was first supplied with water by means of leaden pipes in 1337, which water was procured from springs at Tyburn, and made to communicate with a large conduit at Cheapside in 1385. In 1613 Sir Hugh Middleton finished his canal for supplying London with water, which was brought from Ware to a reservoir at Islington, and soon afterwards wooden pipes were laid in the streets, with small leaden pipes for conveying the water into private houses, but water-carriers were still attached to Aldgate pump in the time of Anne.

WEATHERCOCK. It is related that Andronicus Cyrrhestes built an octagonal tower at Athens, having at each side a statue of the God, to whom the wind blowing from that quarter was dedicated, and in the middle of the tower was a small spire, having a copper Triton, which being put in motion by the wind, pointed to the deity from whom it proceeded. The custom of placing vanes on the top of church steeples, is at least as old as the middle of the ninth century; and as these vanes were frequently made to resemble a cock, the emblem of clerical vigilance, they received the appellation of weathercocks. In the ages of ignorance the clergy frequently styled themselves the cocks of the Almighty.

Varro is said to have been the first who connected the motion of the vane by a rod to a dial, in the interior of a building. (See *Anemoscope*).

WEEK. The division of the month into weeks of seven days, was practised by the Hebrews from the earliest period of their history, and is of great antiquity in India. The Greeks divided their month into decades or portions of ten days each, and the Romans into nine days each, the last of which was the great market-day, called the Nundinal. The week of seven days was introduced into Europe by the Christians, and

seems to have been generally adopted about the end of the fourth century.

WHALE. The Norwegians are represented as having been employed in the whale fishery in the commencement of the ninth century, in which they were soon followed by the Biscayans. The first mention that occurs in the English history of *whalebone*, formerly called whale fin, is in 1593, when a considerable quantity of it was brought from America, having been recovered from the wreck of some Biscayan vessels. In 1598 the English commenced upon their whale fishery at Spitzbergen.

WIG. Folard asserts that wigs were used in the time of Hannibal, and introduced into Rome under Augustus, when baldness was considered a deformity; and we are told that Otho had a kind of scalp of fine leather, with locks of hair upon it, so well arranged as to appear natural. About the middle of the seventeenth century, during the reign of Lewis XIV., the fashion of wearing full-bottomed or dress perukes was brought into this country from France, and continued to be worn till the middle of the last century, though now confined to the Lord High Chancellor and the Judges. Bag-wigs became fashionable in the commencement of the eighteenth century.

WIND. The Greeks generally acknowledged eight different kinds of winds, which they inform us Æolus communicated to navigators; and we find that the four principal or cardinal winds are mentioned by Homer in his account of the storm raised by Neptune, to prevent the escape of Telemachus from the island of Calypso;—

“ He spoke, and high the forky trident hurl’d,
Rolls clouds on clouds, and stirs the watery world ;

At once the face of earth and sea deforms,
 Swells all the winds, and rouses all the storms—
 Down rush the night—east, west, together roar,
 And south and north roll mountains to the shore."

The present names by which the winds are generally known throughout Europe, are said to have originated in the time of Charlemagne, and the division of them into thirty-two points, soon after the invention of the compass.

WINDMILL. (*See Mill*).

WINDOW. Previous to the introduction of glass, we find that windows were generally made of fret-work, and the interstices occasionally filled up with oiled paper, horn, or some other transparent substance. The mother of Sisera is described as looking out of a latticed window for the return of her son. The Romans, about the time of Augustus, first began to glaze their windows, and several panes of glass used for this purpose were discovered at Herculaneum. (*See Glass*).

WINE. The art of procuring wine from the fermented juice of the grape, may be fairly ascribed to Noah, who is represented as having first planted a vineyard; but almost every country has boasted of some individual or Deity, to whom the honour of having invented fermented liquors has been attributed; nor has there been any nation or class of people discovered, however uncivilized, who have not been enabled to procure some intoxicating beverage, either from the production of animals, as honey, from corn, the juice of fruits, or the sap of trees and plants.

Little is known respecting the ancient wines, except from the writings of Pliny, from which it appears, that the vine was not cultivated at Rome till about 600 B. C., and that both the Greeks and Romans had a method of concentrating

of the atmosphere, was forced up the tube till it was resisted by the spring of the internal air, and which spring was more or less, according to the heat of the atmospheric air. This instrument was brought to England by Drebbel in the time of James I.; but the plan was afterwards altered, and considerably improved upon by the Academists del Cimento of Florence, who, by hermetically sealing the open end of the tube, the air being previously exhausted, caused the coloured fluid, it contained, which was spirits of wine, to expand or rise instead of fall by the accession of heat. The application of mercury, instead of spirits of wine, was first suggested by Dr. Halley; though the honour of reducing it to practice is due to Fahrenheit, a Dutchman, in 1730, who also first affixed a graduated scale to the tube, commencing from the greatest known degree of artificial cold, which he called zero, and extending to the boiling part of mercury, which he considered as equal to six hundred degrees, which degrees were indicative of the expansion or magnitude of the quicksilver, in so many minute portions, beyond the extreme of artificial cold, or its original bulk.

TIN. This metal was employed as an alloy to others by the Egyptians and Greeks, and is noticed by Moses. Great quantities of tin were exported from Cornwall by the Phoenicians, 600 B. C. Pliny ascribes to the Gauls the art of tinning or covering copper and other metals with a thin coat of tin, for culinary purposes.

TOBACCO. This plant was probably used for smoking in various parts of Asia, and especially in China, long before the discovery of it in the New World; it was first brought to Europe from America, and received its name from its having been first discovered in the Island of Tobago, or, as others state, from the Spaniards having been first acquainted

with its uses at Tobacco, a province in Yutican. An account of the plant under the name of Cohoba, was published in 1496, by Romanus Pere, a Spanish monk, whom Columbus, on his second departure from America, had left at St. Domingo; and it was shortly afterwards imported in considerable quantities both by Spain and Portugal. In 1559 Jean Nicot, the French Ambassador at the Portuguese Court, sent some seeds of tobacco to his own country, where it was cultivated under the name of Nicotania. It was introduced into this country by Sir Francis Drake, in 1560.

The custom of *smoking* was common to the natives of America, and therefore came into Europe with the plant itself. James I., by many heavy imposts, endeavoured to abolish the use of tobacco, which he considered as prejudicial to the health of his subjects; and in 1619 wrote a treatise expressly against the use of it, which he entitled "A Counterblast to Tobacco," wherein he complains "that some of the gentry of the land bestowed three and some four hundred a-year on this precious stink;" hence, probably, its great scarcity in England, for Aubrey, who wrote about the year 1680, says, "I have heard some of our old yeomen neighbours affirm, that when they went to market, they culled out their biggest shillings to lay in the scales against the tobacco;" thus making it in value equal to its weight in silver.

Aubrey further informs us that the *pipes* used by the opulent were made of silver, in the form of *woodcocks' heads*, which was the name given to them, and that the common people made use of walnut-shell and a straw: pipes made of clay, were used by the native Indians of Virginia in 1585, though our common pipes did not appear till the commencement of the eighteenth century.

The practice of *chewing tobacco* is cotemporary with that of smoking. The Romans are said to have been partial to the chewing of mallow, and the stalks of the asphodel.

TRANSPORTATION was first inflicted as a punishment in the time of Elizabeth, though but little resorted to till the reign of Charles II., when persons found guilty of offences entitled to the benefit of clergy, and sentenced to be imprisoned, were transported to the British settlements, in North America, not as slaves, but servants, being bound by indenture to their masters for seven years; the last three of which, they were entitled to wages. When the American revolution restricted the transportation of convicts to that country, the system of confining prisoners to hard labour was adopted, but this form the number of the prisoners proving inconvenient, it was determined, in 1787, to establish a colony in New South Wales, and to send the convicts there to assist in the cultivation of the soil.

TRUMPET. This instrument is said to have been invented by the Egyptians, and from the earliest period was made use of on all solemn or grand occasions; it was probably introduced into this country by the Romans, and so early as 775 we read of its being sounded to command respect and silence, on the approach of majesty.

The invention of the *speaking trumpet* is attributed to Athanasius Kircher, about the middle of the seventeenth century, but his works were written in so confused a style; that they were for a considerable time neglected, and the credit of the invention is, therefore, more generally given to Sir Samuel Morland, who made trial of one of five feet six inches in length, in the presence of Charles II., in 1670; and, though speaking in his ordinary pitch of voice, was heard at the distance of one thousand yards. Another person, selected probably for the loudness and distinctness of his voice, was perfectly understood at the distance of four miles and a half. The speaking trumpet said to have been used by Alexander the Great, is considered as fabulous.

The *Ear-trumpet*, for the convenience of those who are deaf, is supposed to have been invented by Baptista Porta; and Kircher describes a method of constructing a funnel, by which people in separate apartments might converse with one another, as is now common in many mercantile houses.

ULTRAMARINE. A beautiful blue pigment, procured from the Lapis Lazuli, and supposed to have been introduced from Persia into Europe in the sixth century; the word itself, Ultramarine, first occurs in the sixteenth century.

UNIFORM. About the middle of the fifteenth century, Charles VII. of France having formed a regiment of cavalry, consisting of fifteen companies of six hundred men each, directed, that in order that the men might be known in action, or discovered, if guilty of irregularities, they should wear the livery of the Captain of the corps to which they belonged; for which purpose their coats were ornamented with appropriate colours, and hence proceeded that uniformity in clothing which has been established among the European troops. In this country, the soldiers being the tenants or retainers of particular Barons, wore the badges of their respective Commanders, in a dress somewhat similar to that of the firemen or watermen of London; till about the time of Charles II. when a national uniform was introduced. The naval uniform appeared in the commencement of the eighteenth century.

URN. Among the curiosities discovered at Pompeii, was an urn containing a hollow metallic cylinder for the insertion of a red hot iron, and in every respect similar to the common tea urn.

VACCINATION: (*See Inoculation.*)

VELLUM. (*See Parchment.*)

VIOLIN. It has been much disputed by the learned, whether any instrument resembling the violin was played upon by the ancients : the general opinion seems to be, that it was invented by the Italians in the tenth century, at which time it was called the rebec, and had but three strings : when the fourth string was added is unknown. The viol played with a bow is noticed in the legendary tale of St. Christopher, written in the year 1200: In the time of Chaucer the fiddle was called a crowd, and the performer upon it a crowder.

Beltazarini, a celebrated performer in the time of Lewis XIV., first brought this instrument into repute, and a regular band of violin players was established for the entertainment of that Monarch. In imitation of which Charles II. formed a similar company for his court.

VISCOUNT. This rank, considered only as a title of honour, was first conferred by Henry VI. on John Lord Beaumont, in 1440.

WAITS are supposed to have been formerly poor minstrels, part of whose duty it was during the winter nights to parade and guard the streets, and occasionally to call the hour.

WALKING-STICKS are first noticed as being used by young men of fashion in this country, about the middle of the seventeenth century, when they were formed with an indented head in order to afford a more easy pressure of the hand which they supported; this was afterwards altered for a round hollow top, which sometimes contained nutmeg; or ginger to warm the stomach of the valetudinarian; but soon after coming into general use, the cavity was exclusively appropriated to its reception, and the meeting of two friends was invariably marked, after the first salutation, by unscrewing the tops of their walking-sticks, and offering to each other their titulating treasure.

WALNUTS,—originally called Gaul nuts, having been introduced into this country from France in the time of the Saxons.

WATCH. (See Clock).

WATCHMEN, with the exception of the waits, are not noticed in London prior to the sixteenth century; they are mentioned with their rattles in the middle of the seventeenth.

WATER. London was first supplied with water by means of leaden pipes in 1337, which water was procured from springs at Tyburn, and made to communicate with a large conduit at Cheapside in 1385. In 1613 Sir Hugh Middleton finished his canal for supplying London with water, which was brought from Ware to a reservoir at Islington, and soon afterwards wooden pipes were laid in the streets, with small leaden pipes for conveying the water into private houses; but water-carriers were still attached to Aldgate pump in the time of Anne.

WEATHERCOCK. It is related that Andronicus Cyrrhestes built an octagonal tower at Athens, having at each side a statue of the God, to whom the wind blowing from that quarter was dedicated; and in the middle of the tower was a small spire, having a copper Triton, which being put in motion by the wind, pointed to the deity from whom it proceeded. The custom of placing vanes on the top of church steeples, is at least as old as the middle of the ninth century; and as these vanes were frequently made to resemble a cock, the emblem of clerical vigilance, they received the appellation of weathercocks. In the ages of ignorance the clergy frequently styled themselves the cocks of the Almighty.

Varro is said to have been the first who connected the motion of the vane by a rod to a dial in the interior of a building. (*See Anemoscope*).

WEEK. The division of the month into weeks of seven days, was practised by the Hebrews from the earliest period of their history, and is of great antiquity in India. The Greeks divided their month into decades or portions of ten days each, and the Romans into nine days each, the last of which was the great market-day, called the Nundinal. The week of seven days was introduced into Europe by the Christians, and

seems to have been generally adopted about the end of the fourth century.

WHALE. The Norwegians are represented as having been employed in the whale fishery in the commencement of the ninth century, in which they were soon followed by the Biscayans. The first mention that occurs in the English history of *whalebone*, formerly called whale fin, is in 1593, when a considerable quantity of it was brought from America, having been recovered from the wreck of some Biscayan vessels. In 1598 the English commenced upon their whale fishery at Spitzbergen.

WIG. Folard asserts that wigs were used in the time of Hannibal, and introduced into Rome under Augustus, when baldness was considered a deformity; and we are told that Otho had a kind of scalp of fine leather, with locks of hair upon it, so well arranged as to appear natural. About the middle of the seventeenth century, during the reign of Lewis XIV., the fashion of wearing full-bottomed or dress perukes was brought into this country from France, and continued to be worn till the middle of the last century, though now confined to the Lord High Chancellor and the Judges. Bag-wigs became fashionable in the commencement of the eighteenth century.

WIND. The Greeks generally acknowledged eight different kinds of winds, which they inform us Æolus communicated to navigators; and we find that the four principal or cardinal winds are mentioned by Homer in his account of the storm raised by Neptune, to prevent the escape of Telemachus from the island of Calypso;—

“ He spoke, and high the forky trident hurl'd,
Rolls clouds on clouds, and stirs the watery world;

At once the face of earth and sea deforms,
 Swells all the winds, and rouses all the storms—
 Down rush the night—east, west, together roar,
 And south and north roll mountains to the shore."

The present names by which the winds are generally known throughout Europe, are said to have originated in the time of Charlemagne, and the division of them into thirty-two points, soon after the invention of the compass.

WINDMILL. (*See Mill*).

WINDOW. Previous to the introduction of glass, we find that windows were generally made of fret-work, and the interstices occasionally filled up with oiled paper, horn, or some other transparent substance. The mother of Sisera is described as looking out of a latticed window for the return of her son. The Romans, about the time of Augustus, first began to glaze their windows, and several panes of glass used for this purpose were discovered at Herculaneum. (*See Glass*).

WINE. The art of procuring wine from the fermented juice of the grape, may be fairly ascribed to Noah, who is represented as having first planted a vineyard; but almost every country has boasted of some individual or Deity, to whom the honour of having invented fermented liquors has been attributed; nor has there been any nation or class of people discovered, however uncivilized, who have not been enabled to procure some intoxicating beverage, either from the production of animals, as honey, from corn, the juice of fruits, or the sap of trees and plants.

Little is known respecting the ancient wines, except from the writings of Pliny, from which it appears, that the vine was not cultivated at Rome till about 600 B.C., and that both the Greeks and Romans had a method of concentrating

their wines, either by spontaneous evaporation or boiling, and of reducing them to a syrup or even to a solid cake, in which state they were preserved for many years. Pliny notices wine of two hundred years old, the age of the wine being considered a criterion of its goodness.

Great attention was paid to the cultivation of the vine when Probus was Emperor, about the close of the third century; at that time it is supposed to have been planted along the banks of the Rhine, the Maine, and the Moselle, and to have been introduced into Britain. About the close of the tenth century, wine was procured in considerable quantity and of excellent flavour, from the counties of Lincoln, Gloucester, and Somerset; and even now better wine is produced in England from the grape, than from any other fruit whatever.

The importation of foreign wines commenced soon after the Conquest, and was greatly increased by the acquisition of Guienne, under Henry II. Spanish wines were common in the reign of Richard II., and continued to grow in estimation, especially sack, which was produced from the grape of Xeres, in Spain. Hollingshed asserts, there were upwards of eighty-six different kinds of wine imported from France and other countries into England, in the sixteenth century; nor does this importation appear to be disproportionate to the demand for them. - On the enthronization of Neville, Archbishop of York, in 1553, upwards of one hundred tons of wine were consumed, and his predecessor is reported to have used, besides other wines, eighty tons of claret yearly. At this period it was even customary for the princes and nobles to bathe in wine.

During the long wars with Lewis XIV., the wines of Portugal were introduced in opposition to those of France, whose trade in them it was deemed impolitic to encourage; and being in general found more congenial to the temperature of this climate, have ever since been the favourite beverage of Englishmen.

Dioscorides, Actuus, and others among the ancients, were acquainted with the art of rendering the acid in spoiled wine imperceptible, and of stopping the fermentation or corruption by litharge. The introduction of sugar of lead for this purpose, is modern. The oldest prohibition against the adulteration of wine, is an order of William, Count of Hennegan, Holland, and Zealand, in 1327. The mixture of litharge with wine, was made death in the Duchy of Wirtemberg, in 1697.

WIRE was originally made by beating the metal into thin plates, and then cutting it into slips and rounding it with a hammer. The art of drawing the metal through a hole in a steel plate, was practised at Augsburg in 1350; and in this country in the middle of the sixteenth century. A wire mill was erected at Sheen, near Richmond, in 1663.

WOOLLEN CLOTH. The art of manufacturing woollen cloth is mentioned in the Pentateuch and other parts of scripture, and probably preceded that of cotton and flax. In the time of Augustus, woollen garments were in general use throughout Rome, and the manufacture of the cloth was brought to great perfection, the sheep being procured from Tarentum and other parts of Greece, celebrated for the fineness of their fleece. Though many of the arts were lost on the destruction of the empire by the barbarians, yet that of producing a warm clothing from wool, was, from its utility, partially preserved, and began to revive about the middle of the tenth century in the Low Countries, from whence it soon after spread into other parts of Europe.

It seems to be now generally allowed, in opposition to Caesar's opinion, that the art of dressing, spinning, and weaving, both flax and wool, was known to the southern parts of Britain previous to the Roman invasion, though it

is little noticed till about the eleventh century, when a number of Flemings having been driven out of their own country by an extraordinary encroachment of the sea, settled themselves near Carlisle, and introduced the woollen manufacture into England as a separate trade. In the year 1197, a law was made for regulating the fabrication and sale of this cloth, but it was not till 1330, when John Kemp, a master manufacturer, was prevailed upon to quit Flanders, and to settle at Kendal, in this country, that our woollen cloths were considered of any repute : they were afterwards brought to great perfection by the skill of the Flemish refugees, who sought an asylum in this country from the persecutions of Philip II. of Spain.

WORSTED, called by the Flemings "Ostardi," was manufactured in England in the time of Edward II., as appears from a patent granted to John Peacock, for the measuring of every piece of worsted made in the city of Norwich.

WRITING. Pictures are supposed to have been first resorted to, for the purpose of conveying ideas by signs or letters to others ; these, in process of time, gave way to hieroglyphical characters, and they in their turn to arbitrary marks, representing words or sentences, as is still practised in China. At last some happy genius arose, and tracing the sounds made by the human voice to their most simple elements, reduced them to a few vowels and consonants, and by affixing to each of them the signs we now call letters, taught men by their combinations to describe in writing, the different words or sounds which they employed in speech.

These kind of arbitrary marks or letters are supposed to have been invented by the Egyptians, and communicated to the Israelites by Moses : the Phœnicians also acquired them from Egypt, and, by means of Cadmus, they were transmitted to Greece ; and it is a curious circumstance that the

letters we now use can be traced back to the alphabet of Cadmus; for the Roman character is evidently derived from the Greek, and the Greek bears a strong resemblance to the Hebrew or Samaritan, made use of by the Phœnicians.

Letters were at first written from the right hand to the left, as still common in many parts of Asia and Africa: afterwards the Greeks adopted the method of writing their lines alternately, from the right to the left, and from the left to the right, called boustrophedon: at length the motion from the left hand to the right being found most convenient, has generally prevailed throughout Europe.

The Britons were ignorant of the use of letters till the arrival of the Romans, and were little acquainted with the art of writing till the commencement of the eighth century.

YEAR. According to Diodorus Siculus, Pliny and others, the Egyptian year consisted originally of but one lunation, and a considerable time elapsed before it was in any way regulated by the course of the sun. At length, by attentively comparing the motions of the sun and moon together, the Egyptians found that one revolution of the former, was equal to about twelve of the latter, and they therefore established a luni-solar year, consisting of twelve lunar months, or 355 days, which was adopted by the Hebrews, and is still adhered to by the Arabians and all other Mahometans.

In the course of time, however, it was discovered, that the different seasons of the year were continually changing with respect to the months in which they had been formerly observed; in order therefore to remedy this defect, and to make the same parts of the year correspond to the same seasons, a method of intercalating a few days at certain intervals, was resorted to; at first five days were deemed requisite for this purpose, but that number proving insufficient, a similar addition was given, by Mercurius Trismegistus, the Hermes, or Thouth of the Egyptians, and the year was made to consist of 365 days.

There still remained a deficiency of nearly six hours in the solar year, which is said to have been known to the Egyptians, and communicated by them to Plato and Eudoxus about 400 B. C., however this may be, Julius Cæsar was the first, who, by the advice of Sosigenes, an Egyptian mathe-

matician directed that it should be regularly accounted for by the addition of a day in every fourth year, which, though approximating very nearly to the truth, was still an error in excess of nearly eleven minutes a year.

It seems to have been at all times considered a point of considerable importance in the church, that the festival of Easter should be simultaneously held in all parts of the Christian world, and as this was to be regulated by the first full moon after the vernal equinox, it was necessary that the precise day when the vernal equinox took place, should be generally known. It appears, that in the year 1582, Pope Gregory III. discovered, that since the reformation of the calendar by Cæsar, the trifling error of eleven minutes a year had increased to thirteen days, and that the vernal equinox since the council of Nice, held in 325, had advanced ten days : in order, therefore, to restore the equinoxes to their proper place in the calendar, he determined upon throwing out the ten days of excess, which had shifted the fifth of October to the fifteenth, and this correction, which was called the Gregorian year, was immediately adopted by all the Catholic governments, but not by the Protestant States till the year 1700, nor in England till 1752.

Most countries commenced their year from the first appearance of the moon at the time of the equinoxes, either vernal or autumnal ; but, the first Christians chose to begin their year from the Annunciation or Incarnation of Our Saviour ; and this was at length directed to be generally observed by Dionysius, Abbot of Rome, in the sixth century ; it appears, however, to have been the custom of the Anglo-Saxons to consider Christmas-day as the first day of the year, and, which continued till the arrival of the Normans, who commenced their year from the circumcision. Hence our early historians differ very much from each other on this point, some dating the year to commence from the Annunciation, others from the Nativity, and others again from the

Circumcision ; nor does it appear to have been at all settled till the time of the Reformation, when both the civil and ecclesiastical authorities interposed, to fix it to the feast of the Annunciation, which continued, till the Act for altering the style in 1752, when the civil year was ordered to commence on the first of January, and thus, according to Stowe, made to agree with the historical year, which had its rise from the time of William the Conqueror, though, in fact, he was crowned on Christmas-day, 1066.

The custom of computing the number of years elapsed from the epoch of Our Saviour's birth, is first noticed in the ecclesiastical history, written by Bede, about the year 730, and is supposed to have been introduced by Augustin ; nevertheless, it seems to have been the common practice of most of the European nations, in all civil transactions, to number the years from the accession of the reigning monarch, and it was not till the establishment of the Republican form of government by Cromwell, that the year of our Lord was generally used.

ZINC is first noticed by Albertus Magnus, under the term of Marchasita Aurea in the thirteenth century : the name Zinc was given to it by Paracelsus, about the year 1530 ; it was first purposely procured from Calamipe, by the addition of some inflammable substance by Henkel, in 1730.



A LIST OF AUTHORS,

&c.

QUOTED OR REFERRED TO IN THIS VOLUME.

ÆSCHYLUS, the tragic poet, born at Athens, 525 B.C., died 456.

Æsculapius, the god of medicine, born at Epaudarus about 1200 B.C.

Albertus Magnus, the German mathematician and philosopher, died 1280.

Aldhelm, Bishop of Sherborne, an eminent scholar, died 709.

Aldrovendi, the naturalist, died at Bologna, 1605.

Alexander the Great, died at Babylon, 323 B.C., aged 32.

Ambrose, Bishop of Milan, died 397.

Anacharsis, the Scythian philosopher, flourished about 600 B.C.

Anaximander, the Greek philosopher, flourished about 580 B.C.

Anderson, James, the commercial writer, died 1643.

Anthony, St., the Egyptian monk, died 356, aged 105.

Apollodorus, the grammarian, died about 130 B.C.

Apollodorus, the architect, died 110.

Appian, the historian, died about 160.

Aquinas, Thomas, a famous scholastic divine, died 1274.

edes, the mathematician, killed at Syracuse, 308 B.C.
 thus, the Greek astronomer, died about 250 B.C.
 hanes, the Greek comic poet, flourished about 450 B.C.
 e, the philosopher and preceptor of Alexander, died
 2 B.C.

he founder of the sect called the Arians, died 336.
 dorus, the geographer, of Ephesus, died about 90 B.C.
 sius, Bishop of Alexandria, died 373.
 in, or Anstin, first archbishop of Canterbury, died
 out 609.

us, emperor, died 14

Roger, the philosopher and mathematician, died 1292.
 ton, Danes, the antiquarian, died 1800.

, Isaac, an eminent divine and mathematician, died
 177.

it, bishop of Casarea, died 379.

ville, the celebrated printer, died 1775.

learned monk, sur-named the Venerable, died 738.

ohn, the chronologist, died 1782.

r; Samuel, the geographer, died 1667.

is, the mathematician and musician, killed 538.

s, the historian, died 1450.

Robert, the philosopher, died 1691.

Tycho, the astronomer, died 1601.

James, the traveller, died 1794.

am, George, the historian, died 1662.

, George Louis, the naturalist, died 1784.

s, first king of Thebes, flourished, according to Blair,
 d the Arundelian marbles, 1500 B. C. ; but according
 Sir Isaac Newton, 1045 B.C.

a, emperor of Rome, died 41.

John, the reformer, died 1564.

Julius, killed 44 B. C.

n, William, the antiquarian, died 1693.

Charles De, the antiquary, died 1698.

- Cartes, Rene, Des, the philosopher, died 1660.
 Cassini, John, the astronomer, died 1712.
 Cassini, James, his son, died 1756.
 Caxton, William, the printer, died 1491.
 Caylus, Count, the antiquary, died 1765.
 Cecrops, first king of Athens, flourished about 1550 B.C.
 Celsus, the physician, flourished 150.
 Chaucer, Geoffrey, the poet, died 1409.
 Cicero, the orator, died 43 B.C.
 Claudius, emperor, died 54.
 Cleostratus, the astronomer, flourished about 500 B.C.
 Coke, Sir Edward, a celebrated lawyer, died 1634.
 Columbus, Christopher, the discoverer of America, died 1506.
 Confucius, the Chinese philosopher, died about 470 B.C.
 Constantine the Great, died 337.
 Copernicus, Nicholas, the astronomer, died 1543.
 Cotton, Sir Robert, the antiquary, died 1631.
 Ctesibius, the Alexandrian mathematician, flourished about
 120 B.C.
 Dante, the Italian poet, died 1321.
 Democritus, the philosopher, flourished 430 B.C.
 Dioclesian, emperor, died 304.
 Diodorus, Siculus, the historian, died about 30 B.C.
 Diogenes, the cynic, died about 330 B.C.
 Dioscorides, the physician, died about the year 56.
 Domitian, emperor, died 96.
 Dugdale, Sir William, the antiquary, died 1685.
 Dunstan, St., died 988.
 Epictetus, the philosopher, died about the year 120.
 Epicurus, the philosopher, died about 270 B.C.
 Erasistratus, the physician, flourished about 250 B.C.
 Erasmus, a learned divine, died 1536.
 Esop, the fabulist, died 550 B.C.
 Euclid, the mathematician, died about 280 B.C.
 Eutropius, the historian, died about the year 400.

- Faust, or Faustus, the printer, died 1466.
 Fitz Stephen, William, the historian, died 1191.
 Fleetwood, William, the antiquarian, died 1583.
 Froissart, John, the historian, died 1402.
 Galen, the physician, died about the year 200.
 Galileo, the mathematician and astronomer, died 1642.
 Geber, the chemist, supposed to have flourished in the eighth century.
 Geoffry of Monmouth, the historian, died about 1160.
 Gibbon, Edward, the historian, died 1794.
 Gildas, Badonias, the historian, died in the monastery of Bangor, 590.
 Gregory the Great, bishop of Rome, died 604.
 Grotius, Hugo, the civilian, died 1645.
 Guericke, Otto, the philosopher, died 1654.
 Guicciardini, the historian, died 1540.
 Hacklyut, the navigator and geographer, died 1616.
 Halley, Edmund, the astronomer, died 1742.
 Handel, George, the musician, died 1759.
 Heath, James, the chronological historian, died 1664.
 Heliodorus, the mathematician, flourished about the year 40.
 Henry, Richard, the historian, died 1790.
 Herculaneum, an ancient city of Campania, in Italy, destroyed by an irruption of Vesuvius, about the year 79. The situation of it was accidentally discovered by some labourers, in 1713, and many valuable remains of antiquity have been recovered from its ruins.
 Herodotus, the historian, flourished 450 B.C.
 Hipparchus, the astronomer, died about 125 B.C.
 Hippocrates, the physician, died about 370 B.C.
 Hollingshed, Ralph, the historian, died 1580.
 Homer, the poet, flourished about 900 B.C.
 Hooke, Nathaniel, the historian, died 1764.
 Hooke, Robert, the mathematician, died 1635.
 Horace, the poet, died about 8 B.C.

Huine, David, the historian, died 1776.
 Huygens, Christian, the mathematician, died about 1695.
 Ignatius, bishop of Antioch, died 107.
 Ingulphus, the historian, died 1109.
 Isidore, St., died about the year 450.
 Jerome, St., died 420.
 Josephus, Flavius, the Jewish historian, died 98.
 Justinian, the emperor, died 565
 Juvenal, the poet, died 197.
 Kircher, Athanasius, the mathematician, died 1680.
 Kepler, John, the astronomer, died 1630.
 Knolles, Richard, the historian, died 1610.
 Knox, John, the reformer, died 1573.
 Leland, John, the antiquarian, died 1582.
 Linnæus, Charles, the naturalist, died 1778.
 Livy, the historian, died about the year 17.
 Lucretius, the poet, died 52 B.C.
 Lycurgus, the legislator of Sparta, died 870 B.C.
 Maffæus, Francis Scipio, the antiquarian, died 1755.
 Mahomet, the prophet of the Turks, died 631.
 Martial, the poet, died 109.
 Medici, Cosmo, died 1464. Lorenzo, 1498.
 Melancthon, the reformer, died 1560.
 Mercator, the geographer, died 1594.
 Montfaucon, Bernard, the antiquary, died 1741.
 Muller, John, or Regiomontanus, the mathematician, died
 1476.
 Munster, Sebastian, the mathematician, died 1552.
 Napier, John, baron of Merchisten, died 1617.
 Nero, emperor, died 68.
 Newton, Sir Isaac, the mathematician, died 1727.
 Ovid, the poet, died 15.
 Palladio, the architect, died 1580.
 Paracelsus, the physician, died 1541.
 Paris, Matthew, the historian, died about 1260.

- Pausanias, the tourist, died 140.
- Phædrus, the fabulist, died about 31.
- Pindar, the poet, died 435 B. C.
- Pliny the Elder, the naturalist, suffocated by the eruption of Vesuvius, 79.
- Plot, Robert, the antiquarian, died 1696.
- Plutarch, the biographer, died 120.
- Polybius, the historian, died about 130 B. C.
- Porta, Baptista, the mathematician and philosopher, died 1615.
- Prideaux, Humphrey, the historian, died 1724.
- Ptolemy, Claudius, the astronomer and mathematician, died about 150.
- Pythagoras, the philosopher, flourished about 550 B. C.
- Quintilian, the orator, died about 95.
- Rapin, Thoyras, the historian, died 1725.
- Reaumur, Antoine, the mathematician, died 1757.
- Robertson, William, the historian, died 1793.
- Roger de Hoveden, the historian, flourished 1250.
- Rymer, Thomas, the antiquary, died 1713.
- Sallust, the historian, died 35 B. C.
- Schwartz, Bartholomew, the chemist, died 1340.
- Selden, John, the antiquarian, died 1654.
- Seneca, the philosopher, died 65.
- Shaw, Thomas, the traveller, died 1751.
- Simonides, the poet, 500 B. C.
- Skinner, James, the antiquarian, died 1667.
- Socrates, the celebrated moral philosopher, died about 400 B. C.
- Solon, the legislator, died 460 B. C.
- Sophocles, the poet, died 410 B. C.
- Speed, John, the historian, died 1629.
- Spelman, Henry, the antiquarian, died 1641.
- Spencer, the poet, died 1598.
- Sprat, Bishop of Rochester, the historian, died 1713.
- Stow, John, the historian, died 1605.

- Strabo**, the geographer, died about 25 B. C.
Suetonius, the historian, died about 124.
Sulpicius, the ecclesiastical historian, died about 420.
Sydenham, the physician, died 1689.
Tacitus, the historian, died about 117.
Tavernier, John, the traveller, died 1689.
Terence, the poet, died about 150 B. C.
Thales, the philosopher, died 490 B. C.
Theocritus, the poet, flourished 250 B. C.
Theodosius, emperor, died 395.
Theophrastus, the philosopher, died 290 B. C.
Thespis, the poet, flourished 550 B. C.
Tiberius, emperor, died 37.
Tindal, the historian, died 1774.
Torricelli, the mathematician, died 1647.
Trajan, emperor, died 117.
Usher, the chronologer, died 1656.
Varro, the historian and philosopher, died about 27 B.C.
Virgil, Polydore, the historian, died 1555.
Virgil, the poet, died 18 B.C.
Vitruvius, the architect, died about 20 B.C.
Walsingham, Thomas, the historian, died about 1460.
Wedgewood, Josiah, the manufacturer of porcelain, died
 1795.
Westminster, Matthew of, the historian, died 1380.
Wickliffe, the reformer, died 1385.
William of Malmesbury, the historian, died 1150.
Xenophon, the historian, died 359 B.C.
Zoroaster, the Persian philosopher, supposed to have flourished
 about 1200 B.C.

THE LADDER OF SAFETY.



T was a bright summer evening; the labours of the long day were over; the shops in the city were closed, and the weary attendants were refreshing themselves, some by a walk in the park, or by the river, while others were enjoying social intercourse in their quiet homes. Among the latter was the family of whom I write.

As they sat and talked, some one of the little group thought that he perceived the smell of smoke or burning. Could it be only fancy? But no, it becomes stronger; there can be no mistake. With one impulse they hasten to the door, when horror-stricken they discover, the lower storey of the house is

Every Week. No. 19

wrapped in flames, and all possibility of effecting their escape by getting down stairs is cut off. No time is to be lost, for the hungry flames seem rushing onward to destroy them, and in another moment the terrified family are imploring aid from the window of the top-most storey.

Nor did they appeal in vain; already had a crowd of people gathered in the streets, and at the first burst of flames the fire-escape had been sent for in all haste, and so they cheered and comforted the shrieking women, and told them that deliverance was sure, and could not be far distant. And anxiously every eye now turned from the fast-burning house towards the bridge, over which they knew the rescuers must come. At last a shout announced their appearance—hope filled every breast—and the agonizing screams from those upper windows were hushed.

Quickly the ladder is placed against the burning house; a brave man rushes forward to mount it—the hearts of that multitude are beating as the heart of one man. There is a moment's hush. Alas! how speedily it is followed by a universal groan and tumult, for the fire-escape has broken; and with every effort to repair it, it has proved worse than useless! Another wall of bitter agony from that window, and those voices are stilled for ever. Six charred corpses were discovered the next day, to attest the utter failure of that fire-escape.

As I sat thinking over this sad tragedy which only a few weeks ago cast a gloom over our city, it seemed to unfold a solemn warning of no difficult interpretation. For do we not read of flames more terrible?—despair more intolerable?—destruction more sure, threatening every unrepentant sinner? And then, does not that fire-escape, so tardy in its appearance, so ineffectual in the hour of need, suggest a blessed contrast with that ladder from earth to heaven, that vision which cheered Jacob at Bethel? does it not remind us of that ladder which, resting on this weary, sin-stricken, death-doomed world of ours.

reaches up to heaven? That ladder is a type of Christ touching earth in his pure and perfect manhood—strong with all the strength of Divinity, yet thus forming an unfailing way of escape from those pursuing flames.

Dear fellow-sinner, it may be that you whose eyes are now glancing over this page have not yet placed your foot upon this ladder of safety; in other words, that you have not yet come to Jesus. Most earnestly do I pray that even now as you read, the Holy Spirit may show you your real condition of danger.

Your own heart tells you that you have not come as a lost, helpless sinner to the Lord Jesus; that you do not believe on him as your Saviour. It is that Saviour himself who tells you that the wrath of God abideth on you.* It is true that although you believe not, he still spares, "waiting to be gracious"—for "He willeth not the death of a sinner," but "will have all men to be saved." Yet if you will not come to him, then between you and everlasting death there is only the beating of your heart, which one moment may stop, and then? oh! what then? Then there is "weeping, and wailing, and gnashing of teeth." Then there is the "worm that dieth not," the "fire that is not quenched." Then there is deep, dark despair, no one ray of hope to lighten or relieve it. You have been engaged perhaps all day at your office, or your farm, following your profession or business, whatever it may be: have you ever realized that each hour as it sped by with such rapid flight, has brought you with inevitable certainty so much nearer to that awful ruin that is awaiting you? And are you content to lie down thus upon your bed this night? Dare you close your eyes in sleep, careless whether your terrible awakening may not be, "Thou fool, this night thy soul shall be required of thee."

Hard and cruel, perhaps, you think these words, but were they not first uttered by Him whose name

* John iii. 36.

is Love?—who was “grieved at the hardness of their heart”—who wept over impenitent Jerusalem? And why do I repeat them now? It is because you are in peril of unutterable misery, and you know it not; and because there is deliverance at your very door, yet you heed it not. Were there no way of escape, then indeed it would be kinder to keep silence, and allow you to enjoy life for the little time that remains, before even such poor pleasures as earth can bestow are for ever dashed from your lips. But there is hope, there is a way, an unfailing way of safety. True, you have sinned against God from your very infancy, and sin, whether you feel it to be so or not, is indeed a grievous burden. You owed God a loving obedience, but have only loved and served self, and sin, and Satan, and your debt has accumulated to an awful amount. But God’s justice and love are reconciled and find a meeting-place in the Lord Jesus Christ. On the cross he bore the penalty due to your sins; in his life he worked out a perfect righteousness, and the life and the death shall both be reckoned yours, and laid to your account, if only by faith you accept the offered salvation. “He made him to be sin for us, who knew no sin, that we might be made the righteousness of God in him.” This is the ladder that reaches from earth to heaven. By it many a heavy-laden sinner has mounted, and it never yet broke down,—was never known to be too short,—never found to be beyond the reach of the weakest hand that stretched towards it. This ladder is beside you *now*: what can I say more to induce you *now*—even as you read—to plant your foot trustfully on it. Gracious Spirit, do thou touch the reader’s heart to feel his danger, and open his eyes to behold the Deliverer, for Jesus Christ’s sake. Amen.

T 212 .W46 C.1
A history of inventions and di
Stanford University Libraries



3 6105 039 785 444

STANFORD UNIVERSITY LIBRARIES
CECIL H. GREEN LIBRARY
STANFORD, CALIFORNIA 94305-6004
(415) 723-1493

All books may be recalled after 7 days

MAY 1

DATE DUE

28D MAY 6 1995

JUL 0 12 2002

DEC 23 2003

STANFORD UNIVERSITY LIBRARIES
STANFORD, CALIFORNIA 94305

